

Catalog Home

Office of the Registrar

Indiana University – Purdue University Fort Wayne

2101 E. Coliseum Blvd.

Fort Wayne, IN 46805-1499

About IPFW

Indiana University – Purdue University Fort Wayne (IPFW) is the largest institution of higher learning in northeast Indiana, offering nearly 200 prestigious IU and Purdue degrees and certificates. More than 12,000 students of diverse ages, races, and nationalities pursue their education on our 662-acre campus. IPFW combines challenging academic programs with student – changing global market. The university's commitment to service makes it an economic, cultural, and societal leader in the region. IPFW is an Equal Opportunity/Equal Access University accredited by The Higher Learning Commission of the North Central Association of Colleges and Schools.

Frequently Asked Questions

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Where is the campus map?

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Chancellor's Message

Welcome to IPFW:

Thank you for choosing Indiana University — men and women who have earned the highest degree in their field and still strive to accomplish more.

IPFW undergraduate programs prepare you for life, whether that means you enter the workforce in your chosen field or continue your studies at the graduate level. Many programs offer unique theoretical and practical hands-on learning experiences that draw on community resources. IPFW's small class sizes give you and your professors the opportunity to discuss issues and class assignments, or perhaps even collaborate on a research project.

Your undergraduate experience is more than books and classrooms. The Student Handbook and Planner provides details on how you can get involved in any of the nearly 100 student organizations, NCAA Division I or intramural sports, or other special-interest activities.

University services and support systems are for all students. The recreational facilities at the Gates Sports Center, informational resources of Helmke Library, productions at Williams Theatre, and job-placement assistance through Career Services are just a few of the resources available to you.

With more than 43,000 alumni, IPFW is the leading provider of intellectual power and property to the northeast Indiana region. We create human capital — leaders in business and industry. Together, we can help you reach your personal and career goals through your undergraduate studies at IPFW.

With warm regards,

Michael A. Wartell
Chancellor

Part 1: IPFW Profile

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About this Bulletin

The *Bulletin* provides information about the undergraduate programs, rules, courses, and faculty of Indiana University–Purdue University Fort Wayne. Information about IPFW's graduate programs appears in a separate publication, the *IPFW Graduate Bulletin*.

Information in the *Bulletin* will help students make important choices about their education, and it will familiarize them with the many important services IPFW provides. Since the *Bulletin* is a primary resource for making decisions about an IPFW education, it is important for students to refer to it throughout their tenure at the university.

Changes occur as needs arise. Changes in rules and procedures generally become effective at the time they are published. Also, new or changed academic program requirements may provide you with additional options. Because of this, you should review statements on IPFW services, policies, programs, and courses in each new edition of the *Bulletin* published while you are a student. When you enter a degree or certificate program, you will be required to fulfill the requirements published in the *Bulletin* (or its supplement or departmental regulation) current at the time of your most recent entry or re-entry into that program at IPFW. Only with the written acknowledgment of your academic advisor can you elect to fulfill the requirements in any subsequent *Bulletin* or supplement. Your academic advisor can assist you with this choice and ensure that such changes are officially recorded.

NOTE: The information in this *Bulletin* is subject to change without notice. Actions by federal and state governments and the boards of trustees, administration, and faculty of the universities may produce such changes.

About the University

Indiana University–Purdue University Fort Wayne offers more academic and extracurricular opportunities than any other higher education institution in northeast Indiana. A joint campus of two internationally recognized Big Ten schools, IPFW grants both Indiana University and Purdue University degrees.

IPFW reflects the IU and Purdue commitments to excellence in teaching, research, and service. The university takes advantage of the latest technologies in order to enhance information exchange, classroom instruction, research, and communications. Indiana University and Purdue University carry traditions of distinction in humanities, the arts, health sciences, social sciences, engineering, technology, and computer science.

IPFW provides access to an excellent education through academic diversity, flexibility, and affordability. IPFW students have access to superior research, academic, and extracurricular pursuits. IPFW is committed to the continued educational, economic, and cultural development of its 11-county service area.

More than 12,000 students, ranging in age from 14 to 79, are enrolled in nearly 200 academic programs. The university offers undergraduate and graduate degrees as well as certificate options. Some 8,000 additional students pursue noncredit continuing education courses. While the diverse student body continues to grow, the average class size remains 22.

The university is accredited by The Higher Learning Commission of the North Central Association of Colleges and Schools. Various schools, divisions, and programs have earned additional accreditation through professional societies.

IPFW History The history of IPFW is a history of mergers. IPFW has steadily evolved since the initial merger of the IU and Purdue Fort Wayne regional campuses in 1964. A gift of additional land by a consortium of local donors has

increased the size of the campus to 662 acres, including land on the east and west banks of the St. Joseph River. Physically, the university has grown from a single building into a multicampus community cornerstone, offering an unparalleled range of educational and cultural opportunities.

Academic Programs Degree and certificate programs are offered through 9 colleges, schools, or divisions. Arts and Sciences, Health and Human Services, and Visual and Performing Arts contain departments offering both IU and Purdue degree programs. Engineering, Technology, and Computer Science offers only Purdue degree programs; Business and Management Sciences, Education, General Studies, Labor Studies, and Public and Environmental Affairs, only IU. The Academic Success Center serves lower-division students who have not chosen a degree program. The Division of Continuing Studies offers credit and noncredit programs throughout northeast Indiana in cooperation with degree-granting schools and divisions. Other entities, such as the Indiana University School of Medicine—Fort Wayne, offer programs at IPFW with varying degrees of campus affiliation. IPFW also offers the opportunity to participate in the Army Reserve Officer Training Corps (ROTC) program.

IPFW stresses a constructive relationship between teaching and research. Most IPFW faculty members devote 25 percent of their effort to research. Faculty regularly acquire support for creative endeavor in the form of external grants and contracts of about \$5 million a year. Some faculty receive support from internally funded summer fellowships and grants-in-aid, and additional support is available through the Purdue and IU systems. Research activities reflect the research missions of Indiana and Purdue Universities. However, projects tend to involve individuals or small groups of researchers rather than large staffs and facilities, and special emphasis is placed on studies directly related to regional needs and interests. Faculty are encouraged to involve undergraduate students in research projects.

Core Mission The core mission of IPFW is to provide quality post-secondary education in northeast Indiana by focusing on student learning, while fostering intellectual exploration and attainment, and serving the region.

IPFW Goals Long-range goals of the university include continued improvement of academic programs, expanded faculty development programs, enhanced library collections and services, increased university and external support for research, increased academic and fiscal autonomy, attraction and retention of a more heterogeneous student body, expansion of graduate programs that serve regional needs, active support for regional economic development programs, and greater integration with the economic and cultural communities of the region.

The fifth-largest university in Indiana, IPFW has grown without sacrificing its commitment to faculty-student interaction. Quality of teaching will continue to be a major criterion for faculty compensation and promotion-and-tenure decisions and will be recognized through awards for distinguished teaching. To attract and retain outstanding teachers, IPFW will continue its effort to provide competitive levels of faculty compensation.

IPFW will also sustain and enhance support of faculty research and will expand opportunities for students to participate in research projects. The university will promote the use of technology as a feature of university education across the curriculum.

IPFW is committed to preparing students of northeast Indiana for productive lives in a multicultural, changing world. Special attention is given to bringing a university education to nontraditional students. The campus will expand efforts to increase matriculation and retention of minority students, and in a related effort, to hire and retain minority faculty.

The campus will continue to build programs of academic support for all students, including those programs intended for students of outstanding ability. Because the diversity of the student body and staff is an essential component of the university experience, IPFW also intends to attract a somewhat larger number of students from outside the region. To this end, and to accommodate verifiable local demand, IPFW Student Housing on the Waterfield Campus with apartment-style floor plans, opened in August 2004.

IPFW plays an important role in the cultural and economic life of northeast Indiana. Faculty community service is and will continue to be encouraged. The university maintains and expects to strengthen relationships with community arts organizations and seeks additional opportunities to serve as a vital resource for business, industry, public and private education, and government in northeast Indiana. Retraining of the workforce and response to changes in the economy will be important priorities in years to come, as will efforts to improve services for an increasingly diverse student

body. The campus seeks to organize its efforts and relationships with IU and Purdue in ways that will enhance its ability to anticipate and respond to regional needs. The continued development of the campus, with community support engendered by this development, will allow IPFW to meet the increasing demand for higher education in northeast Indiana.

Assessment of Student Learning IPFW is committed to providing quality education and to assuring students gain the knowledge and skills necessary to be successful. Assessment of student learning provides the information we need to make improvements in program structure, course content, and pedagogy. To this end, information is collected at the classroom, department, and institution levels. For example, students may be asked to submit examples of their course work and engage in focus groups. They may also be asked to complete a questionnaire assessing the quality of academic services. These activities help us determine the extent to which students demonstrate competency in the Baccalaureate Framework areas, in the major field of study, and in general education.

IPFW Statements on Diversity In fall 1994, Chancellor Michael Wartell established the following campus statement on diversity:

Indiana University –Purdue University Fort Wayne recognizes, affirms, and celebrates the diversity in its campus, local, state, and national communities. Each member of these communities represents varied and different cultures and attributes simultaneously, yet because of these differences, many have been systematically excluded from full, fair, and respected participation in higher education. Therefore, Indiana University –Purdue University Fort Wayne seeks to demonstrate through its curriculum, support systems, and policies that it values these differences, creating and maintaining a campus environment that welcomes diverse characteristics, backgrounds, and experiences and identifying such diversity as a vital source of the intellectual, social, and personal growth essential to a university education.

To implement the above statement, Chancellor Wartell appointed the campus Diversity Council. In fall 1995, the Diversity Council published the following definition of diversity:

The Diversity Council is committed to creating an environment that enhances learning by recognizing the inherent worth of all individuals at the university. It is our conviction that diversity stimulates creativity, promotes the exchange of ideas, and enriches campus life. Diversity involves the differences among individuals that reflect the cultures from which the university draws strength, including, but not necessarily limited to, differences of race, ethnicity, color, gender, sexual orientation, class, age, and disabilities, as well as political and religious affiliation, and socioeconomic status increasing demand for higher education in northeast Indiana.

Baccalaureate Framework

In April 2006, the Faculty Senate approved a framework for the core learning expected of all IPFW baccalaureate degree students. The Baccalaureate Framework is a statement containing six educational values and expectations for student learning. The Goals of Learning allow students to graduate from IPFW and appreciate how to:

- **Know:** A depth of knowledge in our field and a breadth across multiple areas
- **Value:** Personal integrity and ethical action
- **Think:** Resourceful critical thinking and problem-solving
- **Apply:** Life-long application of knowledge using appropriate technologies
- **Communicate:** Effective communication skills with multiple media
- **Lead:** Citizenship and leadership in diverse communities

Additional information can be found at <http://www.ipfw.edu/academics/programs/undergraduate/framework.shtml>

Undergraduate Programs: Degrees, Certificates, Minors, and Transfers

IPFW is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. Information about North Central accreditation is available from the vice chancellor for academic affairs (KT 170, 260-481-6805). You may also contact the Higher Learning Commission directly at <http://www.ncahlc.org>; or by writing to 30 North LaSalle St., Suite 2400, Chicago, IL 60602-2504; or by phone at 800-621-7440.

The following is an alphabetical list of all undergraduate degree, certificate, minor, and transfer programs available at IPFW.

- A *degree* is an award earned by satisfactorily completing a specified program of courses and adhering to the applicable academic regulations. Each degree includes one or more major fields of study. Completion of a degree program is acknowledged by receipt of a diploma. The two most common degrees earned by IPFW students are the associate degree (abbreviated A.A. for Associate of Arts and A.S. for Associate of Science) and the bachelor's degree (abbreviated B.A. for Bachelor of Arts and B.S. for Bachelor of Science). Earning an associate degree requires at least two years of full-time study, with a longer period if enrolled only part time. Earning a bachelor's degree takes about twice as long.
- A *certificate* is not a college degree, but is composed of a series of courses that focus on a specialized area of knowledge or specific skills. The university recognizes completion of the required courses and satisfaction of applicable academic regulations by awarding a certificate.
- A *minor* is a less comprehensive program of study that is chosen in conjunction with a major field of study. To earn a minor, the student must complete a degree program in a different subject area.
- A *transfer* program is a series of courses that will apply toward a degree to be awarded by another campus of IU or Purdue. Credits for these courses can be transferred to the other campus, but students are required to satisfy the admission and graduation requirements of the campus to which they transfer.

College, school or division codes in the following list are as follows:

ANS:	Arts and Sciences	HS:	Health and Human Services
BMS:	Business and Management Sciences	LS:	Labor Studies
CS:	Continuing Studies	PEA:	Public and Environmental Affairs
EDUC	Education	VPA:	Visual and Performing Arts
ETCS:	Engineering, Technology, and Computer Science		

Program	University	College or School or Division/Department	Degree/Certificate
Accounting	I	BMS/Accounting and Finance	Post-Baccalaureate Certificate in Accounting
Advanced Microprocessors	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	Certificate
Agriculture	P	ANS	Transfer Programs
American Studies	I	ANS	Certificate in American Studies

Anthropology	I	ANS/Anthropology	B.A., Minor, Research Certificate in Anthropology
Applied Ethics	P	ANS/Philosophy	Minor
Architectural Engineering Technology	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	A.S.
Art Education	I	VPA/Fine Arts	B.A.
Art History	I	VPA/Fine Arts	Minor
Arts	I, P	ANS	A.A.
Biology	P	ANS/Biology	A.A., B.S., Minor, Research Certificate
Biology Teaching	P	ANS/Biology	B.S.
Business	I	BMS	A.S.B., B.S.B.
Business Studies	I	BMS	Minor
Chemical Methods	P	ANS/Chemistry	A.S.
Chemistry	P	ANS/Chemistry	B.S., B.S.C., Minor, Research Certificate
Chemistry Teaching	P	ANS/Chemistry	B.S.
Civic Education and Public Advocacy	I	ANS/Political Science	Certificate in Civic Education and Public Advocacy
Civil Engineering	P	ETCS/Engineering	B.S.C.E.
Civil Engineering Technology	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	A.S.
Commercial Art	I	VPA/Visual Communication and Design	A.S. in Commercial Art
Communication Studies	P	ANS/Communication	Minor
Computer-Controlled Systems	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	Certificate
Computer Engineering	P	ETCS/Engineering	B.S.Comp.E.
Computer Engineering Technology	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	B.S.

Computer Networking	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	Certificate
Computer Science	P	ETCS/Computer Science	B.S., Minor
Computer Science	P	ANS/Mathematical Sciences	B.A.
Construction Engineering Technology	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	B.S.
Consumer and Family Sciences	P	HS/Consumer and Family Sciences	Transfer Program
Creative Writing	I	ANS/English and Linguistics	Minor
Criminal Justice	I	PEA	Minor
Critical Care Nursing	P	HS/Nursing	Certificate
Cytotechnology	I	HS	Transfer Program
Dance	P	VPA/Theatre	Minor
Dental Assisting	I	HS/Dental Education	Certificate in Dental Assisting
Dental Hygiene	I	HS/Dental Education	A.S. in Dental Hygiene
Dental Laboratory Technology	I	HS/Dental Education	A.S. in Dental Laboratory Technology
Early Childhood Education	I	EDUC/Educational Studies	A.S.Ed.
Economics	I	ANS/Political Science	B.A., Minor
Electrical Engineering	P	ETCS/Engineering	B.S.E.E.
Electrical Engineering Technology	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	A.S., B.S.
Electronic Communications	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	Certificate
Electronics	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	Minor
Elementary Education	I	EDUC/Educational Studies	B.S.Ed.
English	I	ANS/English and Linguistics	A.A., B.A., Minor
Ethnic and Cultural Studies	I	ANS	Certificate in Ethnic and Cultural Studies

Film and Media Studies	I	ANS/Communication	Minor
Fine Arts	I	VPA/Fine Arts	B.A., B.F.A., Minor
Fine Arts	I	VPA/Visual Communication and Design	B.F.A., Minor
Folklore	I	ANS/English and Linguistics	Minor
Forestry and Natural Resources	P	ANS	Transfer Program
French	I	ANS/International Language and Culture Studies	A.A., B.A., Minor
General Studies	I	CS	A.A.G.S., B.G.S.
Geology	I	ANS/Geosciences	B.A., B.S.G., Minor
German	I	ANS/International Language and Culture Studies	A.A., B.A., Minor
Gerontology	I	ANS	Certificate in Gerontology
Health Information Administration	I	HS	Transfer Program
History	I	ANS/History	A.A., B.A., Minor
Honors Program	I, P	OAA/Honors	Certificate
Hospitality Management	P	HS/Consumer and Family Sciences	B.S.
Hotel, Restaurant, and Tourism Management	P	HS/Consumer and Family Sciences	A.S.
Human Services	P	HS/Human Services	B.S., Minor
Industrial Engineering Technology	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	A.S., B.S.
Infomatics	P	ETCS/Computer Sciences	Minor
Information Systems	P	ETCS/Computer and Electrical Engineering Technology & Information Systems and Technology	A.S., B.S., Minor
Interior Design	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	A.S., B.S.
International Studies	I	ANS	Certificate in International Stud
Interpersonal and Organizational Communication	P	ANS/Communication	B.A.
Journalism	I	ANS/Journalism	Minor, Transfer Program

Labor Studies	I	Labor Studies	A.S.L.S., B.S.L.S., Certificate in Labor Studies, Minor
Linguistics	I	ANS/English and Linguistics	Minor
Manufacturing Management	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	Certificate
Mathematics	P	ANS/Mathematical Sciences	A.A., B.S., Minor, Research Certificate
Mathematics Teaching	P	ANS/Mathematical Sciences	B.S.
Mechanical Engineering	P	ETCS/Engineering	B.S.M.E
Mechanical Engineering Technology	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	A.S., B.S.
Media and Public Communication	P	ANS/Communication	B.A.
Media Production	P	ANS/Communication	Minor
Medical Imaging Technology	I	HS	Transfer Program
Medical Technology	P	ANS/Biology	B.S.
Music and an Outside Field	I	VPA/Music	B.S.
Music Education	I	VPA/Music	B.M.E.
Music (Performance)	I	VPA/Music	B.M.
Music Therapy	I	VPA/Music	B.S.M.T.
Native American Studies	I	ANS	Certificate in Native American Studies
Nuclear Medicine	I	HS	Transfer Program
Nursing	P	HS/Nursing	B.S., LPN B.S., RN-B.S.
Occupational Therapy	I	HS	Graduate Program
Organizational Leadership and Supervision	P	ETCS/Division of Organizational Leadership and Supervision	A.S., B.S., Minor
Paramedic Sciences	I	HS	Transfer Program
Peace and Conflict Studies	I	ANS	Certificate in Peace and Conflict Studies

Philosophy	P	ANS/Philosophy	B.A., Minor
Physical Therapy	I	HS	Transfer Program
Physics	P	ANS/Physics	B.S., Minor, Research Certificate
Physics Teaching	P	ANS/Physics	B.S.
Piano Pedagogy	I	VPA/Music	Certificate in Piano Pedagogy
Political Science	I	ANS/Political Science	A.A., B.A., Minor
Prepharmacy	P	ANS	Transfer Program
Preveterinary	P	ANS	Transfer Program
Preveterinary Technology	P	ANS	Transfer Program
Professional Writing	I	ANS/English and Linguistics	Minor
Psychology	P	ANS/Psychology	A.A., B.A., Minor, Research Certificate
Public Affairs	I	PEA	Minor
Public Affairs: Criminal Justice	I	PEA	B.S.P.A.
Public Affairs: Environmental Policy	I	PEA	B.S.P.A.
Public Affairs: Health Services Administration	I	PEA	B.S.P.A.
Public Affairs: Legal Studies	I	PEA	B.S.P.A.
Public Affairs: Public Management	I	PEA	B.S.P.A.
Public Affairs: Specialized Study	I	PEA	B.S.P.A.
Public Relations	I	ANS	Minor
Quality	P	ETCS/Manufacturing & Construction Engineering Technology and Interior Design	Certificate
Radiation Therapy	I	HS	Transfer Program
Radiography	I	HS	A.S.R.
Religious Studies	P	ANS/Philosophy	Minor

Respiratory Therapy	I	HS	Transfer Program
Risk and Emergency Management	I	PEA	Certificate in Risk and Emergency Management
Secondary Education	I	EDUC/Educational Studies	B.S.Ed.
Sociology	I	ANS/Sociology	B.A., Minor
Spanish	I	ANS/International Language and Culture Studies	A.A., B.A. Minor
Speech and Hearing Therapy	P	ANS/Audiology and Speech Sciences	B.S.
Supervisory Leadership	P	ETCS/Division of Organizational Leadership and Supervision	Certificate
Teaching English as a New Language	I	ANS/English and Linguistics	Certificate in Teaching English New Language
Theatre	P	VPA/Theatre	B.A., Minor
Theatre Teaching	P	VPA/Theatre	Minor
Women's Studies	I, P	ANS	A.A., B.A., Certificate in Women's Studies, Minor

IPFW Office Directory

Campus Emergencies—Police (SS 102)	481-6911
Campus Emergencies—Medical	481-6911
Weather-related Announcements	481-6050
Campus General Information/Switchboard (KT 153A)	481-6100
Academic Success Center (KT 109)	481-6595
Academic Support and Advancement, Center for (KT G23)	481-6817
Admissions (KT 111)	481-6812
Affirmative Action/Equal Opportunity (KT 110N)	481-6106
Athletics, Recreation, and Intramural Sports (GC 201)	481-6643
Athletics-Reservation Desk (GC 210)	481-6655

Bookstore (KT G10)	483-6100
Bursar (KT G57)	481-6824
Campus Safety (WU 127)	481-6610
Career Services (KT 109)	481-6595
Child Care Center (CCC, 4133 Hobson Road)	481-0111
Continuing Studies (KT 145)	481-6619
Off-Campus Credit Programs (KT 145)	481-6111
Dean of Students (WU 111)	481-6601
Disabilities, Services for Students with (WU 118)	481-6832
Diversity and Multicultural Affairs (WU 118)	481-6608
Financial Aid (KT 103)	481-6820
Graduate Studies (KT 108A)	481-6795
Honors Program (WU G25)	481-6924
International Student Services (KT 104)	481-6923
IPFW Theatre Box Office (WT 124A)	481-6555
Library, Walter E. Helmke (LB 148)	481-6512
Mastodon Advising Center (KT 109)	481-6595
Mastodon Academic Performance Center (KT 109)	481-6595
Military Science (DN 192)	481-0154
Office of Academic Internships, Cooperative Education and Service-Learning (OACS) (NF 337)	481-6939
Registrar (KT 107)	481-6815
Student Life (WU 115)	481-6609
Student Government Association (WU 225)	481-6586
Veterans' Benefits Representative (KT 107)	481-6126
University Police (SS 102)	481-6900

Women and Returning Adults, Center for (WU 120) **481-6029**

Writing Center (KT G19) **481-5740**

Colleges, Schools, and Divisions

College of Arts and Sciences (CM 153) **481-6160**

Doermer School of Business and Management Sciences (NF 360) **481-6472**

Division of Continuing Studies (KT 144) **481-6619**

School of Education (NF 250B) **481-6441**

College of Engineering, Technology, and Computer Science (ET 243B) **481-6839**

College of Health and Human Services (NF 142) **481-6967**

Division of Labor Studies (KT G28) **481-6831**

Division of Public and Environmental Affairs (NF 260) **481-6351**

College of Visual and Performing Arts (VA 102) **481-6977**

IPFW Bookstore Hours (fall/spring)

Monday–Thursday

Friday

Saturday

8:30 a.m.– 7:30 p.m.

8:30 a.m.– 3 p.m.

10 a.m.– 1 p.m.

Helmke Library Hours (fall/spring)

Monday–Thursday

Friday

Saturday

Sunday

8 a.m.–11 p.m.

8 a.m.–6 p.m.

9 a.m.–6 p.m.

noon – 11 p.m.

Part 2: General Education Requirements

Click on a link to be taken to the entry below.

- Area I: Linguistic and Numerical Foundations
- Area II: Natural and Physical Sciences
- Area III: The Individual, Culture, and Society

- Area IV: Humanistic Thought
- Area V: Creative and Artistic Expression
- Area VI: Inquiry and Analysis
- Subject Area Abbreviation Key

Principles of General Education

General Education ensures that, upon graduation, students will be familiar with the important modes of human thought that are the foundations of science, philosophy, art, and social behavior. General Education expects students to understand the traditions that have informed one's own and other cultures of the world.

In order to do so, General Education at IPFW defines an integrated pedagogical framework for courses taken outside the student's major discipline. Furthermore, General Education-approved courses may be foundational or advanced, the goals of the General Education requirements are achieved through cumulative course work.

Therefore, students who have completed the General Education requirements at IPFW are expected:

To be familiar with the important modes of human thought that are the foundations of science, philosophy, art and social behavior.

To possess effective foundation skills:

- Read, write, and speak with comprehension, clarity, and precision
- Identify substantive knowledge and disciplinary methods
- Develop information literacy skills.
- Reason quantitatively (as means of gaining and creating knowledge and drawing reliable conclusions)

To demonstrate the ability to think critically and to solve problems using the foundation skills:

- Evaluate their ideas and the ideas of others based upon disciplined reasoning.
- Understand the traditions that have formed one's own and other cultures.
- Be able to articulate their ideas in appropriate media.

To complete a research/creative project outside the student's major discipline that requires synthesizing knowledge and applying skills gained.

Students who entered IPFW for the first time in fall 1995 or a subsequent term in a bachelor's degree program, or transferred into a new bachelor's degree program, are required to satisfy IPFW's General Education program as part of their degree requirements. The courses listed below may be used to satisfy these requirements. The student's advisor will know of any courses that have been added to this list.

Students should check specific college, school or division requirements to determine if any special conditions about General Education apply to their major. Under certain circumstances, students may be allowed to substitute courses for those listed below. An academic advisor will explain the procedure for requesting a substitution.

The General Education Web site is www.ipfw.edu/academics/gened.

See the Subject Area Abbreviation Key at the end of this section to determine the subject area under which the course falls, (e.g., ENG W131 falls under English)

Area I: Linguistic and Numerical Foundations

(9 credits)

Course List:

Area II: Natural and Physical Sciences

One approved General Education course in the major discipline may be counted toward fulfillment of Areas II-V.

(6 credits)

Course List:

Area III: The Individual, Culture, and Society

One approved General Education course in the major discipline may be counted toward fulfillment of Areas II-V.

(6 credits)

Course List:

Area IV: Humanistic Thought

One approved General Education course in the major discipline may be counted toward fulfillment of Areas II-V.

(6 credits)

Course List:

Area V: Creative and Artistic Expression (3 credits)

One approved General Education course in the major discipline may be counted toward fulfillment of Areas II-V.

(3 credits)

Course List:

Area VI: Inquiry and Analysis

All students completing a bachelor's degree program at IPFW must complete the AREA VI General Education course at IPFW.

(3 credits)

Course List:

Subject Area Abbreviation Key

A&AE	Aerodynamics and Aeronautical Engineering
ACE	Adult Continuing Education
ACS	Applied Computer Science
AFRO	Afro-American Studies
AGR	Agriculture
AGRY	Agronomy
AHLT	Allied Health
AMST	American Studies
ANSC	Animal Sciences
ANTH	Anthropology
ARET	Architectural Engineering Technology
AST	Astronomy
AUS	Audiology and Speech Sciences
BCHM	Biochemistry
BIOL	Biology
BUFW	Business-Fort Wayne
BUS	Business
CDFS	Child Development and Family Studies
CE	Civil Engineering
CET	Civil Engineering Technology
CFS	Consumer and Family Sciences
CHE	Chemical Engineering
CHM	Chemistry
CIMT	Computer-Integrated Manufacturing Technology
CLAS	Classical Studies
CMLT	Comparative Literature
CNET	Construction Engineering Technology
COAS	Arts and Sciences-General
COM	Communication
CPET	Computer Engineering Technology
CS	Computer Science
CSR	Consumer Sciences and Retailing
DANC	Dance
DAST	Dental Assisting
DHYG	Dental Hygiene
DLTP	Dental Lab Technology
EALC	East Asian Language and Culture (Chinese)
ECON	Economics
EDUA	Education
EDUC	Education
ECE	Electrical Engineering
ECET	Electrical and Computer Engineering Technology
ENG	English

ENGR	Engineering
ENTM	Entomology
FILM	Film Studies
FINA	Fine Arts
FNN	Foods and Nutrition
FNR	Forestry and Natural Resources
FOLK	Folklore
FREN	French
FWAS	Fort Wayne Arts and Sciences
GEOG	Geography
GEOL	Geology
GER	German
GERN	Gerontology
HIST	History
HON	Honors
HORT	Horticulture
HPER	Health, Physical Education, and Recreation
HSCI	Health Sciences
HSRV	Human Services
HTM	Hotel, Restaurant, and Tourism Management
HUMA	Humanities
IDIS	Interdisciplinary Studies and Honors
IE	Industrial Engineering
IET	Industrial Engineering Technology
ILCS	International Language and Culture Studies
IM	Informatics
INTL	International Studies
INTR	Interior Design
JOUR	Journalism
LBST	Liberal Studies
LING	Linguistics
LSTU	Labor Studies
LTAM	Latin American Studies
MA	Mathematics
ME	Mechanical Engineering
MET	Mechanical Engineering Technology
MSE	Materials Engineering
MUS	Music
NUR	Nursing
OLS	Organizational Leadership and Supervision
PACS	Peace and Conflict Studies
PCTX	Pharmacology and Toxicology
PHIL	Philosophy
PHYS	Physics
POLS	Political Science
PSY	Psychology
REL	Religion
SLAV	Slavic Languages (Russian)
SLIS	Library and Information Science
SOC	Sociology
SPAN	Spanish
SPEA	Public and Environmental Affairs
STAT	Statistics
SWK	Social Work

TECH	Technology
THTR	Theatre
VCD	Visual Communication and Design
VICT	Victorian Studies
VM	Veterinary
WOST	Women's Studies

Part 3: TransferIN.net: Indiana Core Transfer Library

TransferIN.net: Indiana Core Transfer Library

What is the CTL?

Indiana is working to help you transfer college credits more easily. To enable students to connect college credits, Indiana has developed the Core Transfer Library (CTL) - a list of courses that will transfer among all Indiana public college and university campuses, assuming adequate grades.

Core Transfer Library courses will meet the general or free elective requirements of undergraduate degree programs, and most CTL courses will also count toward degree program requirements - if an equivalent course is taught at your new campus.

At the time of publication, the IPFW courses listed below have been approved as part of the CTL. Additional courses are being added. For complete and up-to-date information, visit www.transferIN.net.

Course List:

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

FINA H101 - Art Appreciation

Objectives: to acquaint students with outstanding works of art and to provide an approach to appreciation through knowledge of purposes, techniques, form, and content. No credit toward a fine arts degree.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II**Preparation for Course**

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MUS Z101 - Music for the Listener

Introduction to the elements of music through the mode of listening and a historical survey of the way those elements have been used in various types of musical compositions. For non-music majors.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 206 - Philosophy of Religion

This course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given

for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 444 - Human Sexual Behavior

A survey of research in human sexuality with the primary focus at the social psychological level. Problems in sex research and theoretical issues will be considered.

Preparation for Course

P: Junior class standing and PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Part 4: Colleges, Schools & Divisions

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160 ~ www.ipfw.edu/as/

The College of Arts and Sciences offers programs and courses in the traditional liberal arts disciplines. In addition to providing students with opportunities to develop skills required for the workplace or for advanced study, it seeks to foster well-rounded development of the individual. The college recognizes the role of nontraditional students at IPFW and makes special efforts to meet their needs.

Graduates of the college's baccalaureate programs should have knowledge and awareness enabling them to be effective citizens and lifelong learners. They are expected to have a working understanding of the knowledge and methodology appropriate for their discipline and should be aware of the major issues in their field and able to communicate field content effectively.

The college's Associate of Arts program with 10 concentration areas serves as an intermediate step toward completion of a baccalaureate degree. The chemical methods Associate of Science program, on the other hand, serves students who are preparing for a career as a chemical technician and is not recommended for students who wish to pursue a bachelor's program.

The service and research missions of the college are those appropriate to a comprehensive regional university. The college is responsible for basic-skills courses in mathematics and oral and written communication, as well as the majority of the courses fulfilling college and IPFW general-education requirements. Faculty engage in research or creative endeavor linked to their teaching as well as to IPFW's role as the regional center for higher education. Through research, faculty maintain their qualifications as teachers and, in their contribution to knowledge in their disciplines, enhance the reputation of the campus. Through research and service, the college seeks to make itself a vital resource for business, industry, public and private education, the arts, and government in northeast Indiana.

Academic Programs

The College of Arts and Sciences offers a broad range of minors, transfer programs, and interdisciplinary certificate programs. Each program with its sponsoring unit in the college is listed below for each degree. If you are undecided about a major within the college, you should, with the help of your advisor, choose courses carefully to assure reasonable progress as you narrow your choices and finally decide on a specific plan of study. If you change your major within the college, your degree requirements and your university affiliation may also change.

All bachelor's degrees require a major of at least 24 credits in courses specified by the major department. Minors include (a) a minimum of 12 credits with at least 8 credits at the 200 level or above; (b) at least half the credits taken as resident credits; and (c) a grade of C or better in each course.

Associate of Arts

An Associate of Arts (A.A.) is available with a choice of 10 concentrations. You can generally apply all credits earned in the A.A. program toward a bachelor's degree with a major in the A.A. concentration area. See Part 5 for A.A. requirements.

Concentration

Biology
English
French
German
History
Mathematics
Political Science
Psychology
Spanish
Women's Studies

Department

Biology
English and Linguistics
International Language and Culture Studies
International Language and Culture Studies
History
Mathematical Sciences
Political Science
Psychology
International Language and Culture Studies
Women's Studies

Associate of Science

Concentration

Chemical Methods

Department

Chemistry

Bachelor of Arts

Major

Anthropology
Computer Science
Economics
English
French
Geology

Department

Anthropology
Mathematical Sciences
Arts and Sciences
English and Linguistics
International Language and Culture Studies
Geosciences

German
History
Interpersonal and Organizational Communication
Media and Public Communication
Philosophy
Political Science
Psychology
Sociology
Spanish
Women's Studies

International Language and Culture Studies
History
Communication
Communication
Philosophy
Political Science
Psychology
Sociology
International Language and Culture Studies
Women's Studies

Bachelor of Science

Major

Biology
Biology Teaching, B.S.
Chemistry, B.S.C.
Chemistry Teaching
Geology
Mathematics
Mathematics Teaching
Medical Technology
Physics
Physics Teaching
Speech and Hearing Therapy

Department

Biology
Biology
Chemistry
Chemistry
Geosciences
Mathematical Sciences
Mathematical Sciences
Biology
Physics
Physics
Audiology and Speech Sciences

Minors

Minor

Anthropology
Applied Ethics
Biology
Chemistry
Communication Studies
Creative Writing
Economics
English
Film and Media Studies
Folklore
French
Geology
German
History
Journalism
Linguistics
Mathematics
Media Production

Department

Anthropology
Philosophy
Biology
Chemistry
Communication
English and Linguistics
Arts and Sciences
English and Linguistics
Arts and Sciences
English and Linguistics
International Language and Culture Studies
Geosciences
International Language and Culture Studies
History
Arts and Sciences
English and Linguistics
Mathematical Sciences
Communication

Philosophy
Physics
Political Science
Professional Writing
Psychology
Public Relations
Religious Studies
Sociology
Spanish
Women's Studies

Philosophy
Physics
Political Science
English and Linguistics
Psychology
Arts and Sciences
Philosophy
Sociology
International Language and Culture Studies
Women's Studies

Certificates

Subject

American Studies
Civic Education and Public Advocacy
Ethnic and Cultural Studies
Gerontology
International Studies
Native American Studies
Peace and Conflict Studies
Teaching English as a New Language
Women's Studies

Department

Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
English and Linguistics
Arts and Sciences

Research Certificates

Anthropology
Biology
Chemistry
Mathematical Sciences
Physics
Psychology

Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences

Transfer Programs

The college's transfer programs in agriculture, journalism, forestry and natural resources, prepharmacy, and preveterinary studies are described in Part 5 of the *Bulletin*. You may also complete at IPFW one or two years of work toward many bachelor's degrees offered by the College of Arts and Sciences at Indiana University Bloomington and by the College of Liberal Arts and the College of Science at Purdue University West Lafayette. If you are planning to complete your degree at another campus, make this interest known the first time you see your IPFW academic advisor.

Preprofessional Programs

The college provides academic advising and programs for students who wish to prepare to compete for admission to professional colleges at one of the public universities in the state or at other institutions. In the list below, the years refer to full-time study, 30 to 32 credits per academic year:

<i>Program</i>	<i>Years</i>	<i>University</i>
Predentistry*	3–4	Indiana
Pre-law	4	Indiana
Premedicine*	3–4	Indiana

<i>Program</i>	<i>Years</i>	<i>University</i>
Pre-optometry*	3–4	Indiana
Prepharmacy 2	2	Purdue
Preveterinary Medicine	2	Purdue

*Although some colleges offer early admission to highly qualified students who have completed 90 credits, most applicants have completed a bachelor's degree. If you think you may qualify for early admission, you should consult your advisor about completing requirements for the bachelor's degree from the College of Arts and Sciences during the first year of professional college.

Academic advising for prepharmacy and preveterinary students is provided in the college office; for predental, premedical and pre-optometry students in the Department of Biology; and for prelaw students in the Department of Political Science. If you are not majoring in the department that provides this advising, you should consult the appropriate preprofessional advisor before you see your department advisor to select your courses.

The Science and Engineering Research Semester (SERS)

Students majoring in natural sciences, mathematics, or computer science are encouraged to consider participating in the Science and Engineering Research Semester sponsored by the U.S. Department of Energy. If you are admitted to the program, you spend a fall or spring semester at one of six national laboratories conducting research under the mentorship of a staff scientist or engineer. The laboratories include Argonne in Illinois, Brookhaven in New York, Lawrence Berkeley in California, Los Alamos in New Mexico, Oak Ridge in Tennessee, and Pacific Northwest in Washington state. In addition to being directly involved in research, you also may enroll in one academic course during this semester. Credit for research and course work is determined in consultation with your academic advisor, the department chair, and the SERS campus advisor. Students accepted into the program receive a stipend, housing, and limited travel reimbursement. Inquiries should be initiated at least seven months prior to the anticipated starting date. You should begin planning in your freshman year to reserve time for this opportunity. Eligibility requirements include U.S. citizenship or permanent resident alien status, completion of the sophomore year, and a GPA of 3.00 or higher. For further information, contact the College of Arts and Sciences or the College of Engineering, Technology and Computer Science.

Cooperative Education (Co-Op) Program

Cooperative education provides an opportunity for you to work in an occupation related to your major. In this program, you may alternate between full-time study and full-time employment. Students normally enter the program at the end of their first year or upon completion of the summer session immediately following the first year. Check with your advisor regarding department requirements for eligibility for this program.

Research Certificate

The research certificate provides opportunities for you to engage in active learning opportunities integrating original research and the undergraduate curricula by learning research methods and tools appropriate to your discipline and your research interests within the discipline; by learning the foundations of research in the history, philosophy, and theory of the discipline; by learning advanced communications skills; and by applying these learnings by designing and executing a research study or project and communicating the results to others.

Degree Requirements and Academic Regulations for Students in the College of Arts and Sciences

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to you. Where college regulations are stricter than IPFW regulations, the college regulations apply.

For each of the concentrations for the Associate of Arts, the requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degrees.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- ***COM 114 Fundamentals of Speech Communication***
- ***ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher***
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 (60–63)

Requirements for Associate of Science

Requirements for the Associate of Science in chemical methods appear in Part 5 of this *Bulletin*.

Requirements for Bachelor of Arts

In addition to Areas I through VI of the IPFW General Education program and the requirements for your major, you must satisfy the following college requirements:

1. Parts A through D listed below
2. At least 30 credits in upper-level courses as defined by the departments offering the courses (excluding military science courses).

3. A grade of C or better for all courses counted in the major. At most, one approved course in the major discipline may also count toward IPFW General Education Area II–V requirements. No course in the major discipline may count in Area VI.
4. The IPFW General Education Area I computer literacy requirement for the College of Arts and Sciences is met by completing COM 114, ENG W131, and one additional course selected from the following: CS 106, CS 107, ETCS 160, MA 149, MA 153, MA 154, MA 151, MA 165, MA 166, MA 168, MA 229, MA 230, STAT 125, or an approved departmentally specified course, or completion of STEPS (or successor program).
5. A sufficient number of elective credits to bring the total for graduation to 124.

Part A: English Writing

You must complete ENG W233 or an equivalent second writing course approved for this purpose by the college. Approved equivalents are ENG L202, HIST H217, ILCS I300, POLS Y205, or SOC S260. You must complete both ENG W131 (or equivalent) and your second writing course with a grade of C or better.

Part B: Foreign Language

You must complete the last two courses in one of the sequences listed below (or demonstrate equivalent proficiency). Courses are offered in French, German, and Spanish. You are urged to begin studying a language as soon as possible. For advanced placement and special credit in foreign language, see the additional information for the bachelor's degree.

- FREN F111–F112–F203–F204
- GER G111–G112–G203–G204
- SPAN S111–S112–S203–S204

Part C: Distribution

In addition to the courses used to satisfy part A and B above, you must complete 3 credits in each of the following areas. No credits in your major discipline or in directed study courses may be used to satisfy this requirement.

1. Science and Mathematics. You must complete at least one science course with a scheduled laboratory, and you must also complete with a grade of C or better one mathematics course at the MA 153 level or above, or any other course in the Quantitative Reasoning section of the IPFW General Education requirements except MA 101. If the science and mathematics courses you completed for the IPFW General Education requirements satisfy this requirement, you may select the remaining required course from any of the following disciplines:

Agriculture (FNR 103 only)
 Anthropology (ANTH B200 only)
 Astronomy
 Biology (excluding BIOL 105)
 Chemistry
 Entomology
 Geography (physical geography only)
 Geology
 Mathematics (excluding MA 101, 102, and 103)
 Physics
 Political Science (POLS Y395 only)
 Sociology (SOC S351 only)
 Statistics

2. Social and Behavioral Sciences. Courses from the following disciplines satisfy this requirement:

Anthropology (excluding ANTH B200)
Audiology and Speech Sciences
Communication (excluding COM 114, 210, 240, 312, and 316)
Economics
English (ENG G205, G206, and G301 only)
Geography (human, cultural, or social geography only)
Gerontology (GERN G231 only)
International Studies (INTL I200 only)
Journalism (JOUR C200, C300, J300, and J337 only)
Linguistics
Political Science (excluding POLS Y395)
Psychology
Sociology (excluding SOC S351)
Spanish* (SPAN S425, S426, and S428 only)
Women's studies (WOST W210 and W240 only)

3. Humanities. Courses from the following disciplines satisfy this requirement:

Afro-American studies
American studies
Architectural Engineering Technology (ARET 210 and 310 only)
Chinese*
Classical studies
Communication (COM 210, 216, 240, 312, and 316 only)
Comparative literature
English (except ENG G205, G206, G301, P131, W130, W131, W135, W140, W232, W233, W234, W321, W331, W364, W397, W398, and W421)
Film studies
Fine arts (excluding studio courses)
Folklore
French*
German*
History
International Language and Culture Studies
Journalism (excluding JOUR C200, C300, and J300)
Latin American studies
Music (excluding performance/skills courses)
Philosophy
Religion
Russian*
Spanish* (except SPAN S425, S426, and S428)
Theatre (excluding performance/production courses)
Women's studies (excluding WOST W210 and W240)

*excluding courses used to satisfy the Part B requirement

Part D: Cultural Studies

You must complete two approved courses. Courses used to meet the IPFW General Education requirements or the requirements of Part C may also be used to fulfill Part D requirements; however, the credits for those courses count only once toward graduation.

1. Western Tradition. You must complete one of the following 3-credit courses dealing broadly with the Western tradition:

CLAS C205, C405
COM 312
ENG L101, L102
FINA H111, H112
HIST H113, H114
PHIL 110, 112, 240, 301, 331
POLS Y105, Y381, Y382
REL 231

2. Non-Western Culture. You must complete one of the following 3-credit courses dealing exclusively or primarily with a non-Western culture or cultures:

ANTH E320, E321, E330, E335, E340, E341, E345, E401, E405, E420, E445, E455, E457, E462, E470, P360, P370
CMLT C461
ENG L107, L113, L364, L387
FINA H415
FOLK F305, F352
HIST A310–A311, C393, D410, E100, E331, E332, E336, E431, F341, F342, F346, F432, G451, G452, H201, H202, H203, H204, H232, T335
PHIL 330
POLS Y337, Y339, Y340
REL 230, 301
SPAN S246, S412, S471, S472, S477, S479, S480
WOST W301

Requirements for Bachelor of Science

In addition to Areas I through VI of the IPFW General Education program and the requirements for your major, you must satisfy the following college requirements:

1. Parts A and B listed below
2. At least 30 credits in upper-level courses as defined by the departments offering the courses (excluding military science courses)
3. A GPA of 2.00 or higher for all courses in the major department. At most, one approved course in the major discipline may also count toward satisfying IPFW General Education Area II–V requirements.
4. The IPFW General Education Area I computer literacy requirement for the College of Arts and Sciences is met by completing COM 114, ENG W131, and one additional course selected from the following: ETCS 106, CS 160, MA 149, MA 153, MA 154, MA 159, MA 165, MA 166, MA 168, MA 229, MA 230, STAT 125, or an approved departmentally specified course, or completion of STEPS (or successor program).
5. A sufficient number of elective credits to bring the total for graduation to 124.

Part A: English Writing

You must complete ENG W233 or an equivalent second writing course approved for this purpose by the College of Arts and Sciences. Approved equivalents are ENG L202, HIST H217, ILCS I300, POLS Y205, or SOC S260. You must complete both ENG W131 (or equivalent) and your second writing course with a grade of C or better.

Part B: Foreign Language

You must complete two courses at the first-year level (or demonstrate equivalent proficiency) in one language. Students in a teaching program are exempt from the foreign-language requirement. You are urged to begin studying a language as soon as possible. For advanced placement and special credit in foreign language, see the additional information for bachelor's degrees, below.

Additional Information for Bachelor's Degrees

Along with the IPFW academic regulations (see Part 8), the following information applies to all bachelor's degree programs:

1. Special Credit for Foreign Language.

When you begin your foreign language study at the second-semester (113) level or higher, you are eligible to apply for special credit after you successfully complete the course into which you placed. You may receive up to 14 credits of special credit for the courses you skipped.

2. Undistributed Transfer Credit.

Undistributed transfer credit (for courses not equivalent to IPFW courses) may be used to satisfy General Education requirements, distribution requirements, and may be counted in the major. You should contact the college office to confirm the application to your program of any undistributed transfer credit you are awarded.

3. Credit Restrictions.

The following restrictions apply to all Arts and Sciences degrees:

- a. You may count no more than 4 credits in:
HPER activities
- b. You may count no more than 3 credits in:
IDIS courses ENG W135 MA 149, and only by those departments that allow graduation credit for MA 153
- c. You may count no credit in:
Developmental courses such as CHM 100; EDUC X15x; ENG R15x, W11x, and W130; and MA 109, 111, and 113.

Courses that provide only surveys of career opportunities, such as AGR 101, BUS J100, CNT 101, EDUA F300 (except when offered as Invitation to Teaching) and G250, EDUC X210, ETCS 101, ETCS 101, HSRV 100 (1 cr.), HTM 100, IDIS 105, MHT 100 (1 cr.), NUR 101, RHIT 100, SPEA V352, and VM 102.

Courses designed to provide a skill not required to complete the major, such as AHLT Mxxx, AHSP Mxxx; BUFW C124, C125, C293, and X221; BUS K214; DAST Axxx; DHYG Hxxx; OLS 121; and SPV 399.

Courses offered by the former Indiana Division of General and Technical Studies (DGTS).

4. Credit for Military Service.

Up to 9 credits for military service in the armed forces of the United States may be counted toward graduation.

5. Overlapping Content.

You may not count toward graduation any courses or sequences considered to have overlapping content. Such courses are listed below; check this list before registering. This list may not be exhaustive. Please consult with your advisor. If you enroll in a course that appears in the left column, and you have completed any of the courses that are listed to its right, only the most recently completed course will apply toward graduation.

Courses with Overlapping Content

AHSP M195	BIOL 105
BIOL 100	BIOL 108–109 or 117–119 or 250
BIOL 105	AHSP M195
BIOL 108–109	BIOL 100 or 117–119 or 250
BIOL 117–119	BIOL 100 or 108–109 or 250
BIOL 121/122–133/134	BIOL 100 or 108–109 or 117–119 or 250
BIOL 203–204	BIOL 215–216
BIOL 215–216	BIOL 203–204
BIOL 218	BIOL 241–242
BIOL 220	BIOL 221 or 438–439 or 437
BIOL 221	BIOL 220 or 438–439 or 437
BIOL 233–234	BIOL 381–382
BIOL 241–242	BIOL 218
BIOL 250	BIOL 100 or 108/109
BIOL 317	PSY 317
BIOL 381–382	BIOL 233–234
BIOL 437	BIOL 220 or 221 or 438–439
BIOL 438–439	BIOL 220 or 221 or 437
BUS K200–K211–K212	CS 106, ETCS 106
CHM 101–102	CHM 104 or 111–112 or 115–116 or 129 or 151
CHM 104	CHM 101–102 or 111–112 or 115–116 or 129 or 151
CHM 111–112	CHM 104 or 101–102 or 111–112 or 129 or 151
CHM 115–116	CHM 104 or 101–102 or 111–112 or 115–116 or 151
CHM 129	CHM 104 or 101–102 or 111–112 or 115–116 or 129
CHM 151	CHM 321
CHM 224	CHM 255–256 or 261–262
CHM 251	CHM 254–258 or 263–264 or 265–266
CHM 252	CHM 252 or 263–264 or 265–266
CHM 254–258	CHM 251 or 261–262
CHM 255–256	CHM 251 or 255–256
CHM 261–262	CHM 252 or 254–258 or 265–266
CHM 263–264	CHM 252 or 254–258 or 263–264
CHM 265–266	CHM 224
CHM 321	CHM 373–374 or 383–384
CHM 371	CHM 371 or 373–374
CHM 383–384	COM 251
COM 248	JOUR C200
COM 250	COM 248
COM 251	JOUR J300
COM 352	BUS K200–K211–K212, ETCS 106
CS 106	ECON E201
	ECON E200

ECON E200	POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or
ECON E201	307 or 511
ECON E270	STAT 311 or 516
EE 302	ENG L315
ENG L220	ENG L220
ENG L315	ENG L379
ENG L374	ENG L374
ENG L379	ENG W135
ENG W131	ENG W131
ENG W135	ENG W233
ENG W140	ENG W140
ENG W233	BUS K200-K211-K212, CS 106
ETCS 106	MUS Z201
FOLK F254	GEOL G103 or S100
GEOL G100	GEOL G100 or S100
GEOL G103	GEOL G100 or G103
GEOL S100	
	INTL I209
GER G309	HIST A345–A346
HIST A316	HIST A316
HIST A345-A346	HIST E431
HIST E331	HIST E432
HIST E332	IDIS G102 or G103 or G104
IDIS 110	IDIS 110 or G103 or G104
IDIS G102	IDIS 110 or G102 or G104
IDIS G103	IDIS 110 or G102 or G103
IDIS G104	
	GER G309
INTL I209	
	AMST A441
INTL I441	COM 250
JOUR C200	COM 352
JOUR J300	MA 153
MA 149	MA 151 or 153–154 or 159
MA 150	MA 150 or 153–154 or 159
MA 151	MA 149
MA 153	MA 150 or 151 or 159
MA 153–154	MA 150 or 151 or 153–154
MA 159	MA 165–166 or 227–228 or 229–230
MA 163–164	MA 163–164 or 227–228 or 229–230
MA 165–166	MA 213–215
MA 175	MA 175 or 215
MA 213	MA 175
MA 213–215	MA 163–164 or 165–166 or 229–230
MA 227–228	MA 163–164 or 165–166 or 227–228
MA 229–230	MA 263
MA 261	MA 321 or 363
MA 262	MA 261
MA 263	MA 262 or 363
MA 321	MA 262 or 321
MA 363	FOLK F254
MUS Z201	REL 112
PHIL 112	REL 230
PHIL 330	REL 231

PHIL 331	PHYS 152–251 or 201–202 or 218–219 or 220–221
PHYS 131–132	PHYS 131–132 or 201–202 or 218–219 or 220–221
PHYS 152–251	PHYS 131–132 or 152–251 or 218–219 or 220–221
PHYS 201–202	PHYS 131–132 or 152–251 or 201–202 or 220–221
PHYS 218–219	PHYS 131–132 or 152–251 or 201–202 or 218–219
PHYS 220–221	PHYS 251 or 261
PHYS 241	PHYS 241 or 261
PHYS 251	PHYS 241 or 251
PHYS 261	POLS Y150
POLS Y101	POLS Y101
POLS Y150	ECON E270 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or
POLS Y395	307 or 511
PSY 200	PSY 416
PSY 201	ECON E270 or POLS Y395 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303
PSY 202	or 307 or 511
PSY 205	PSY 205
PSY 225	PSY 202
PSY 235	PSY 335
PSY 317	PSY 369
PSY 335	BIOL 317
PSY 369	PSY 225
PSY 416	PSY 235
REL 112	PSY 200
REL 230	PHIL 112
REL 231	PHIL 330
SOC S351	PHIL 331
SPEA K300	ECON E270 or POLS Y395 or PSY 201 or SPEA K300 or STAT 240 or 260 or 301 or 303 or
STAT 240	307 or 511
STAT 260	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or STAT 240 or 260 or 301 or 303 or
STAT 301	307 or 511
STAT 303	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 260 or 301 or
STAT 307	303 or 307 or 511
STAT 311	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 301 or
STAT 340	303 or 307 or 511
STAT 511	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or
STAT 512	303 or 307 or 511
STAT 516	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or
WOST W200	301 or 307 or 511
WOST W210	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or
	301 or 303 or 511
	EE 302 or STAT 516
	STAT 512
	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or
	301 or 303 or 307
	STAT 340
	EE 302 or STAT 311
	WOST W210
	WOST W200

Upper-Level Courses

All courses numbered 300 or above are considered upper-level courses. In addition, the following 200-numbered courses, defined as upper level by the departments offering them, may be included in the 30 credits in upper-level courses required for graduation.

BIOL 215

CHM 218, 224, 254, 255, 256, 258, 261, 262, 265, 266, 275, and 290

ENTM 206-207

GEOL G213, G221, and G222

MA 261, 263, and 275

PHYS 270

PSY 201, 203, 205, 235, 240, and 272

REL 230 and 231

Correspondence Study

Departments may approve enrollment in correspondence-study courses by students pursuing their majors. After you obtain a signature indicating departmental approval, you must bring the enrollment form to the College of Arts and Sciences for authorization to enroll.

Academic Load

You may register for more than 18 credits per semester or 7 credits in a six-week summer session only if: (1) your most recent semester GPA is 3.00 or higher, (2) you have no incomplete grades at the time of registration, and (3) you obtain approval of a dean of the college.

Pass/Not-Pass Option

The following restrictions are in addition to those in the IPFW academic regulations in Part 8 of this *Bulletin*:

1. You must be classified as a sophomore or higher and must have a GPA of 2.50 or better.
2. You may take no more than two courses per year under the Pass/Not-Pass Option. Summer-session enrollments are counted as part of the preceding academic year for the purpose of this restriction.

Academic Renewal Option

The College of Arts and Sciences participates in the Academic Renewal option for eligible students returning to IPFW after an absence of five or more years. See your advisor for additional details.

Changing Major Within the College

If you change your major within the college, your college requirements will be those specified in the *Bulletin* in effect at the time the change becomes effective.

College of Engineering, Technology, and Computer Science

***Engineering, Technology, and Computer Science Building 243 ~ 260-481-6839 ~
www.etc.ipfw.edu***

The objective of the College of Engineering, Technology, and Computer Science (ETCS) is to be an increasingly valuable technological resource for its students, and to serve society as an integral component of a unique and comprehensive university with vigorous regional ties and a growing national reputation. Within the broader mission of the university, the college's goal is to prepare technicians, technologists, computer professionals, and engineers, and to provide its students with opportunities to develop fundamental skills, knowledge, and a professional attitude. The College is also the academic home for Military Science faculty members who offer courses in the Army ROTC program that leads to commissioning as an Army Officer.

ETCS offers degree programs in many areas related to computer science, engineering technology, engineering, and leadership. Courses for these programs range from the study of fundamentals to practical, real-world, industrial methods.

Academic Programs

Full descriptions of the college's certificate and degree programs appear in alphabetical order in Part 5 of this *Bulletin*.

Associate of Science

Subject

Architectural Engineering
Technology
Civil Engineering Technology
Electrical Engineering Technology
Industrial Engineering Technology
Information Systems
Interior Design
Mechanical Engineering Technology
Organizational Leadership and
Supervision

Department

Manufacturing & Construction Engineering Technology and Interior
Design
Manufacturing & Construction Engineering Technology and Interior
Design
Computer and Electrical Engineering Technology & Information Systems
and Technology
Manufacturing & Construction Engineering Technology and Interior
Design
Computer and Electrical Engineering Technology & Information Systems
and Technology
Manufacturing & Construction Engineering Technology and Interior
Design
Manufacturing & Construction Engineering Technology and Interior
Design
Organizational Leadership and Supervision

Bachelor of Science

Subject

Civil Engineering (B.S.C.E.)
Computer Engineering (B.S.Cmp.E.)
Computer Engineering Technology
(B.S.)
Computer Science (B.S.)
Construction Engineering Technology
(B.S.)
Electrical Engineering (B.S.E.E.)
Electrical Engineering Technology (B.S.)
Industrial Engineering Technology (B.S.)

Department

Engineering
Engineering
Computer and Electrical Engineering Technology & Information
Systems and Technology
Computer Science
Manufacturing & Construction Engineering Technology and Interior
Design
Engineering
Computer and Electrical Engineering Technology & Information
Systems and Technology

Information Systems (B.S.)	Manufacturing & Construction Engineering Technology and Interior Design
Interior Design (B.S.)	Design
Mechanical Engineering (B.S.M.E.)	Computer and Electrical Engineering Technology & Information Systems and Technology
Mechanical Engineering Technology (B.S.)	Manufacturing & Construction Engineering Technology and Interior Design
Organizational Leadership and Supervision (B.S.)	Engineering
	Manufacturing & Construction Engineering Technology and Interior Design
	Organizational Leadership and Supervision

Certificate

Subject

Advanced Microprocessors
Computer Controllec Systems
Computer Networking
Electronic Communications
Quality
Supervisory Leadership

Department

Computer and Electrical Engineering Technology & Information Systems and Technology
Computer and Electrical Engineering Technology & Information Systems and Technology
Computer and Electrical Engineering Technology & Information Systems and Technology
Computer and Electrical Engineering Technology & Information Systems and Technology
Manufacturing & Construction Engineering Technology and Interior Design
Organizational Leadership and Supervision

Minor

Subject

Computer Science
Electronics
Informatics
Information Systems
Organizational Leadership and Supervision

Department

Computer Science
Computer and Electrical Engineering Technology & Information Systems and Technology
Computer Science
Computer and Electrical Engineering Technology & Information Systems and Technology
Organizational Leadership and Supervision

General Degree and Certificate Requirements

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to students in the college. Where the college regulations are stricter than IPFW regulations, the college regulations apply.

Certificates and Associate Degrees

Requirements for certificates and Associate of Science degrees offered by the college are specified in the college's departmental listings.

Bachelor's Degrees

In addition to the requirements of IPFW (see Part 8) and those of your elected major, you must satisfy the following requirements of the College of Engineering, Technology, and Computer Science:

1. Earn a minimum of 124 credits.
2. Earn a graduation GPA of 2.00 or better in courses required for the major that are offered by the major department.
3. Satisfactorily complete ENG W131 or an equivalent English composition course with a grade of C or better.
4. Satisfactorily complete any additional degree requirements defined by individual departments based upon respective accrediting body criteria.

No credit toward graduation will be given for (a) courses or sequences considered to have overlapping content (see listings, College of Arts and Sciences) and (b) developmental courses such as ENG W129; and MA 109, 113.

Cooperative Education (Co-Op) and Related Programs

The college's departments offer many options for Cooperative Education experiences. Regular co-op positions, work-study internships, and practicum positions are available and many departments offer laboratory or teaching assistantships. You should check with your department for these opportunities.

College of Health and Human Services

Neff Hall 142 ~ 260-481-6967 ~ www.ipfw.edu/hhs/

The mission of the College of Health and Human Services is to provide the highest quality education to future and current healthcare and hospitality practitioners by providing a learning environment that supports the development of culturally competent caring, compassionate, and accountable professional. Our undergraduate and graduate programs prepare graduates who are dedicated to the autonomy, dignity, and diversity of the people they serve.

The College is committed to excellence in teaching, service and scholarship and to the elimination of health disparities in our community. Our graduates will value lifelong learning and have a professional work ethic based on professional standards and best practices. The College of Health and Human Services specifically identifies and addresses the ever-changing health and hospitality needs of the community served by Indiana University-Purdue University Fort Wayne (IPFW) through service, leadership, and the development of knowledge.

Available degrees and certificates are listed below.

Associate of Science

Subject

Dental Hygiene
Dental Laboratory Technology
Nursing
Radiography

Department

Dental Education
Dental Education
Nursing
College of Health and Human Services

Bachelor of Science

Subject

Hospitality Management
Human Services
Nursing

Department

Consumer and Family Sciences
Human Services
Nursing

Certificate

Subject

Critical Care Nursing
Dental Assisting

Department

Nursing
Dental Education

Minor

Subject

Human Services

Department

Human Services

Transfer Options

Subject

*Child Development and Family Studies
~Clinical Laboratory Science
~Cytotechnology
*Dietetics
~Health Information Administration
~Medical Imaging Technology
~Nuclear Medicine
~Occupational Therapy
~Paramedic Sciences
~Physical Therapy
~Radiation Therapy
~Respiratory Therapy
*Retail Management

Department

Consumer and Family Sciences
College of Health and Human Services
College of Health and Human Services
Consumer and Family Sciences
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
Consumer and Family Sciences

* Purdue-West Lafayette
~Indiana University-Indianapolis

To complete any of the above programs, you must fulfill the requirements of IPFW (see Part 8), the College of Health and Human Services, and the specific program. Where school or department regulations are stricter than IPFW regulations, the stricter regulations apply.

Academic Renewal Option

Many of the degree programs offered by the school provide the Academic Renewal Option for eligible students returning to IPFW after an absence of five or more years.

See your advisor before or during the first semester you return for additional details.

Special Academic Regulations for Students in the College of Health and Human Services

Professional, mature conduct is expected of all students. Any form of academic or personal misconduct is in direct conflict with professionalism and will result in dismissal from the program in which the student is enrolled. Please refer to the current IPFW *Bulletin* regarding "Code of Student Rights, Responsibilities, and Conduct."

The College of Health and Human Services chooses the most stringent course of action regarding misconduct. A student dismissed from his or her program will also be dismissed from the College of Health and Human Services.

Following University guidelines, after two years a student who has been expelled from IPFW may petition for readmission to the University, program, and College. This does not assure the student will gain readmission.

Criminal-record Screens are conducted in all health and human services majors. Agencies may not accept a student who has a criminal record. In addition, students who have a record of a sex crime against a child may not be placed into a clinical in which there is an actual or potential possibility that they will come into contact with children (IC 5-2-12-12). Students who cannot be placed into clinicals due to their criminal records may not be able to graduate from the program and are advised to pursue a nonclinical degree.

Technical Standards for Admission and Retention of Students

Nonacademic criteria (technical standards) that all applicants/students are expected to meet vary by degree program. These standards include the following five categories: (1) observation; (2) communication; (3) motor-function; (4) intellectual-conceptual, integrative and quantitative abilities and (5) behavior and social attributes. For more information visit our web site for technical standards at <http://www.ipfw.edu/hhs/resources/standards.shtml>.

College of Visual and Performing Arts

Visual Arts Building 102 ~ 260-481-6977 ~ www.ipfw.edu/vpa/

The mission of the IPFW College of Visual and Performing Arts is to (1) provide exceptional professional and liberal arts degree programs that combine development in an artistic discipline and career preparation in the arts to students through individualized instruction within a broadly based curriculum, (2) offer culturally enriching opportunities to all students and members of the university community, and (3) be recognized as the center for arts education, outreach, collaborations, and professional leadership in northeast Indiana as well as a major regional arts resource through excellence in artistic performances, productions, exhibitions, library holdings, and technology. To support this mission, the faculty of the college of Visual and Performing Arts subscribe to the highest academic, artistic, and ethical standards for themselves and their students.

The college is composed of the departments and program areas of fine arts, visual communication and design, music, and theatre and includes faculty associated with both Indiana University and Purdue University. More than 600 students majoring and minoring in the visual and performing arts receive instruction from professional and academic staff that include 32 full-time faculty, 9 half-time continuing lecturers, and more than 50 limited-term lecturers and visiting artists.

The college offers the following academic programs:

Associate of Science

Subject

Commercial Art

Department/Program

Visual Communication and Design

Bachelor's Degrees

<i>Subject</i>	<i>Department/Program</i>
Art Education (B.A.)	Fine Arts
Fine Arts (B.A. and B.F.A.)	Fine Arts
Fine Arts (B.F.A.)	Visual Communication and Design
Music (B.Mus. and B.S.)	Music
Music Education (B.Mus.Ed.)	Music
Music Therapy (B.S.M.T.)	Music
Theatre (B.A.)	Theatre
Theatre Teaching (B.A.)	Theatre

Certificate

<i>Subject</i>	<i>Department/Program</i>
Piano Pedagogy	Music

Minor

<i>Subject</i>	<i>Department/Program</i>
Art History	Fine Arts
Dance	Theatre
Music	Music
Studio Art	Fine Arts
Theatre	Theatre
Theatre Teaching	Theatre

The above programs are described in Part 5 of this *Bulletin*.

As a regularly admitted student, you must follow the degree requirements and the college and program academic regulations specified in the Bulletin in effect at the time you first enrolled in the college. If you wish to follow the degree requirements specified in a later edition of the Bulletin, you must consult with your departmental advisor.

Departments and program areas reserve the right to publish new academic requirements and regulations at the beginning of an academic year. If such changes occur, newly admitted students will be subject to the revised requirements.

Academic Renewal Option

The College of Visual and Performing Arts participates in the Academic Renewal Option for eligible students returning to IPFW after an absence of five or more years. See your advisor for additional information.

Division of Continuing Studies

Kettler Hall 145 ~ 260-481-6619 ~ www.ipfw.edu/dcs

The mission of the Division of Continuing Studies is to provide high-quality lifelong learning opportunities for the residents of northeast Indiana.

Course work from this division is offered for academic credit, corporate training, and personal and professional development. For the convenience of students and employers, programs are organized on and off campus and include distance learning via Internet and television.

The academic programs in the Division of Continuing Studies are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

<i>Subject</i>	<i>Program</i>
General Studies	Associate of Arts in General Studies (A.A.G.S.)
General Studies	Bachelor of General Studies (B.G.S.)

Division of Labor Studies

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

Through the Division of Labor Studies, Indiana University offers a Certificate in Labor Studies, a minor in labor studies, an Associate of Science in Labor Studies, and a Bachelor of Science in Labor Studies. Each combines work in a core of labor studies subjects with courses in other disciplines.

As a discipline, labor studies deals with work, the workplace, and workers and their organizations. It advances a body of knowledge that reflects the concerns of modern labor organizations.

As a program, labor studies enables participants to serve more effectively as members and leaders in their organizations. Participants can also gain a sense of the past and present contexts of work and unionism. Because union leaders need to be familiar with economics, communications, and other subjects, labor studies can assist them in mastering a broad range of learning.

The program encourages participants to make socially useful choices in carrying out the many responsibilities of union membership, union leadership, and community citizenship.

The Division of Labor Studies reports to IUPUI administration through the Indiana University School of Social Work.

Each labor-studies program enhances the knowledge and skills of those active in organized labor. Completion of a program enhances your ability to apply knowledge and skills in unions, government agencies, or educational institutions.

Admission For admission to any of these programs, you must apply directly to the labor-studies office.

General Program Requirements Both of the following degrees and the certificate in labor studies require satisfactory completion of 15 credits from among the Labor Studies Core and additional credits from among three Required Areas of Learning (see listings below). Courses in which you earn a grade of D will count only as electives.

Division of Public and Environmental Affairs

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The Division of Public and Environmental Affairs (DPEA) is a multidisciplinary division affiliated with the Indiana University School of Public and Environmental Affairs (SPEA). DPEA is organized as a professional division, committed to teaching, research, and service. DPEA offers a Bachelor of Science in Public Affairs (B.S.P.A.) degree program that provides a sound general baccalaureate education combined with specialized study. Additionally, DPEA offers minors in criminal justice and public affairs. DPEA's multidisciplinary faculty and curriculum address environmental, health, public policy, and management issues from a variety of perspectives.

The academic programs in the division are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

Subject

Criminal Justice
Public Affairs
Public Affairs: Criminal Justice
Public Affairs: Environmental Policy
Public Affairs: Health Services Administration
Public Affairs: Legal Studies
Public Affairs: Public Management
Public Affairs: Specialized Study
Risk and Emergency Management

Program

Minor
Minor
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.
Certificate

Admission

Admission to DPEA requires sophomore standing and a minimum cumulative grade-point average of 2.30, and completion of ENG W131, the required mathematics course, the computer literacy course(s), and the specific SPEA core course for the major. However, you may enter into the division as a pre-SPEA student as early as your freshman year. You must be in good academic standing (cumulative GPA of 2.00 or higher, core/concentration/major GPA of 2.30 or higher) to qualify for an internship and to graduate.

Special Academic Regulation for Students in Public and Environmental Affairs

Requirements for the undergraduate degree should be completed within 10 years of admission to SPEA. You may transfer no more than 90 credit hours (60 credits from a junior college) toward a Bachelor of Science degree program. A maximum of 10 credits will be awarded on the basis of military training toward any degree from DPEA. With prior approval, you may take three courses totaling no more than 10 credit hours by correspondence through the IU Division of Extended Studies, Independent Study Program. However, you cannot satisfy a core, concentration, or major requirement by correspondence.

Good Standing in DPEA requires that you maintain a minimum semester and cumulative GPA of 2.00 and a minimum core/major GPA of 2.30. Therefore, you will be placed on academic probation if your semester, cumulative, or core/concentration GPA at the end of any regular semester is lower than these minimum standards. Once on probation, you may be dismissed from DPEA and IPFW if you fail to make significant progress toward good standing or if you fail to meet the minimum IPFW standards listed in Part 8 of this Bulletin.

DPEA Internships

As a DPEA major, you may earn a maximum of 12 hours of elective credit during your junior and senior years through the DPEA internship program, if you are a student in good standing and have obtained prior approval from the Internship Coordinator. Internships are strongly encouraged because they give you the opportunity to apply classroom theory and techniques to the real world and to network with professionals in your career field. The program is designed for maximum flexibility so that many valid learning experiences can qualify as internships. Internships can be full or part time, paid or unpaid, credit or noncredit. Interested students should contact the Coordinator of Advising and Student Services at the DPEA office for further information about internships.

Special Opportunities for Students in Public and Environmental Affairs

The IU School of Public and Environmental Affairs offers opportunities to study in Washington, D.C., through the Washington Leadership Program, as well as opportunities to study abroad through programs in The Netherlands and Australia. You should contact the DPEA office for current information about these programs.

The Accelerated Master's Program (AMP) is a competitive program for outstanding undergraduate DPEA students. If you have a GPA of 3.50 or higher, you may apply to the AMP program as early as your junior year. This program allows you to fulfill up to 24 credit hours toward the M.P.A. graduate program or 18 credit hours toward the M.P.M. graduate program by taking graduate-level SPEA courses during your senior year that can count toward both your undergraduate program and a future graduate degree program.

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms/

Note:

The Richard T. Doermer School of Business and Management Sciences is in the process of continual curriculum assessment and revision. Specific courses, programs, and degree requirements may change substantially during the life of a printed medium such as this *Bulletin*. You should consult your advisor about possible changes and opportunities.

General Information

The mission of the Richard T. Doermer School of Business and Management Sciences is to prepare students, primarily from northeast Indiana, for professional business careers of increasing responsibility and leadership in a global society.

To accomplish this mission, the role of the school's faculty, as a scholarly community, is

- to develop and deliver high-quality instruction
- to maintain a strong commitment to applied scholarship, with a secondary emphasis on instructional development and basic scholarship, all appearing in media of quality, and
- to share its scholarly expertise with the business community, the profession, and other constituents.

The mission reflects a continuing commitment to the importance of learning in a changing environment, supported through the interdependence of teaching, intellectual contributions, and service.

Academic Programs

The academic programs in the school are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

Subject

Accounting
Business
Business
Business Studies

Program

Post-Baccalaureate Certificate
Bachelor of Science (B.S.B.)
Associate of Science (A.S.B.)
Minor

School of Education

Neff Hall 250 ~ 260-481-4146 ~ www.ipfw.edu/educ

The mission of the School of Education is to prepare professionals in teaching, counseling, and leadership who demonstrate the capacity and willingness to continuously improve schools and related entities so that they become more effective with their clients by:

- Becoming more caring, humane, and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technological and critical literacies, and effectively communicating with all stakeholders.

The academic programs in the School of Education are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

The School of Education at IPFW offers B.S.Ed. degrees in elementary education and secondary education, and an A.S. in early childhood education. B.S.Ed. degrees are divided into four concentrations based on developmental levels. They are divided under the following:

Concentration

Elementary: Early Childhood (EC)

Middle Childhood (MC)

Secondary: Early Adolescence (EA)

*Select two content area minors: language arts,
mathematics,
science, social studies*

School Setting

Preschool and Elementary: Primary (P-3)

Elementary: Intermediate (4-6)

Middle School/Junior High (6-8)

Adolescence/Young Adulthood (AYA)

High School (9-12)

*Select one content area major: earth/space sciences,
French, German, language arts, social studies, Spanish*

The School of Education also offers minors/certifications in each of the content areas listed above (except AYA social studies) and the following:

Chemistry
Computer Education (endorsement for elementary or secondary)
English as a New Language
Life Sciences
Mathematics
Mild Intervention (certificate for elementary or secondary)
Physical Science
Physics
Theatre

In addition the following teaching majors are available at IPFW through the following colleges:

Major

Art Education (P-12)
Chemistry Teaching
Life Sciences Teaching
Mathematics Teaching
Music Education (P-12)
Physics

College

Visual and Performing Arts
Arts and Sciences
Arts and Sciences
Arts and Sciences
Visual and Performing Arts
Arts and Sciences

Teaching majors can also be completed as a part of the following B.A./B.S. programs:

Major

English
French
German
Spanish

College

Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences

Transition to Teaching

The School of Education also has an alternative route to teacher certification called Transition to Teaching for students who have already earned a baccalaureate degree. This one-year intense program offers teacher certification for elementary and secondary licensure at the graduate level. For a list of qualifications, prerequisites, course requirements, and general information, please contact the School of Education's Student Information Center (Neff 243).

Unit of Affiliated Programs

Part 5: Program Descriptions

Baccalaureate Framework

Area (General Education) Requirements

Area I: Linguistic and Numerical Foundations

Reading/Writing (3 credits)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Listening/Speaking (3 credits)

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning (3 credits)

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 149 - Basic and College Algebra

A one-semester version of 113 and 153. Only 3 credits may be counted toward graduation in Arts and Sciences, Business and Management Sciences, or Public and Environmental Affairs.

Preparation for Course

P: MA 109 with a grade of B- or better, or placement by departmental exam.

Cr. 5.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II: Natural and Physical Sciences**Course List:****ANTH B200 - Bioanthropology**

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

AST L100 - Solar System Laboratory

Study of planetary motions, orbits, shape of planets. Study of moon and Earth's gravity. Some of the laboratories may be held off campus. For Arts and Sciences students, A100-L100 may count as one course.

Preparation for Course

C: AST A100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, summer)

Notes

Laboratory studies to accompany A100.

(1 credit)

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems.

Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

(1 credit)

IDIS G102 - Freshman Seminar/Physical and Natural World

Introduction to scientific study of the physical and natural world. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area II. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 115 - Introduction to Lasers

Two-hour lecture and two-hour laboratory class about the theory and operation of lasers. Lectures will discuss basic optics; the operation of lasers; laser safety; and the uses of lasers in science, industry, construction, communication, entertainment, and medical fields. Laboratory will reinforce classroom discussions. Class intended for nonphysics majors.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 120 - Physics of Sports

This course enables students to learn fundamental physical principles and concepts from examples of situations occurring in sports. The numerous recent applications of physics toward enhancing sports performance, both by improving techniques and equipment, will be selectively studied. Physical concepts such as velocity and acceleration, force, momentum, impulse, rotational motion, torque, pressure, fluid flow, energy, and power will be introduced and exemplified through sports. The course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 127 - Physics for Computer Graphics and Animation

A study of the physics of light and its interactions with objects as these topics apply to the production of computer-generated images. The course will investigate light and color through observation and the use of 3-D graphics programs. In particular how light interacts with surfaces and how we see will be explored in order to understand how to make graphic images that appear true to life.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 135 - The First Three Minutes

This course is a descriptive introduction to the major concepts of contemporary physics and their relationship to theories of the origin of the universe. The course presents a historical survey of cosmological thought, leading to today's recent developments. Topics include stars and galaxies, the four forces, relativity, quantum physics, elementary particles, and the Big Bang. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 136 - Chaos and Fractals

This course explores novel ideas in geometry and dynamical systems as they appear in natural phenomena. Irregular patterns in nature can be understood in terms of a fractal geometry. Physical processes that appear to be random actually obey a deterministic law. The concepts of chaos and fractals help us to understand these processes. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III: The Individual, Culture, and Society

Course List:

AFRO A210 - The Black Woman in America

A historical overview of the black woman's role in American society, including family, social, and political relationships.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

CDFS 255 - Introduction to Couple and Family Relationships

Provides further understanding of family relations for those unmarried, for those contemplating marriage, for those married, and for prospective marriage counselors. A functional approach to the interpersonal relationships of courtship, marriage, and family.

Cr. 3.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

HIST S105 - American History Honors To 1877

Equivalent of HIST H105 for honors students. Colonial period to 1877.

Preparation for Course

P: consent of instructor.

Cr. 3.

HSRV 350 - Drugs and Society

Emphasizes the social, psychological, biological, and cultural contexts in which addiction develops and occurs. Encourages an understanding of substance use, abuse, and addictive behaviors within a larger pattern. For this reason, the course is applicable to anyone who will be in a position in which they must a) work with people on a daily basis, b) provide supervision or support services within an organization, or c) work in any aspect of the helping professions.

Cr. 3.

IDIS G103 - Freshman Seminar/The Individual, Culture, and Society

Introduction to study of the nature and diversity of individuals, cultures, and societies. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area III. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

POLS S103 - Introduction to American Politics - Honors

Equivalent of Y103 for honors students.

Cr. 3.

POLS S211 - Introduction to Law - Honors

Equivalent of Y211 for honors students.

Cr. 3.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y211 - Introduction to Law

An introduction to law as a method for dealing with social problems and as an aspect of the social and political system. An introduction to legal reasoning, procedures, and materials. Will usually include comparison of United States and other societies and their approaches to law.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120H - Elementary Psychology - Honors

Honors equivalent of PSY 120. Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 335 - Stereotyping and Prejudice

This course examines the topics of stereotyping, prejudice, and discrimination from a social psychological perspective. Relying on empirical findings and relevant theoretical approaches, the course moves beyond lay opinions to explore the social psychological foundations and forms of stereotyping and prejudice, and to examine various strategies for reducing intergroup biases.

Cr. 3.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA H120 - Contemporary Health Issues

An examination of current public health, environmental health, and health service delivery issues in the United States. Topics include the organization and costs of health systems, access to care, and the interrelationships between risk

factors and health; also environmental challenges facing our society and their impact on health.

Cr. 1-3.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

Area IV: Humanistic Thought

Course List:

CLAS C205 - Classical Mythology

An introduction to Greek and Roman myths, legends, and tales, especially those that have an important place in the Western cultural tradition.

Preparation for Course

P: ENG 131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

CMLT C217 - Detective and Mystery Literature

Origins, evolution, conventions, criticism, and theory of the detective and mystery story; history of the Gothic novel; later development of the tale of terror; major works of this type in Western fiction, drama, and film.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L108 - Introduction to Contemporary Literature

Significant fiction and drama of the past 20 years. The course may emphasize traditional writers such as Updike and Solzhenitsyn, or experimentalists such as Robbe-Grillet and Brecht.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L150 - Representative American Writers

Great American books by such writers as Hawthorne, Melville, Mark Twain, Cather, Faulkner, and Wright. Books might include *The Scarlet Letter*, *Billy Budd*, *Huckleberry Finn*, *My Antonia*, *The Sound and the Fury*, and *Native Son*.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L301 - Critical and Historical Survey of English Literature I

Representative selections with emphasis on major writers from the beginnings to Swift and Pope.

Preparation for Course

P: ENG L202, or W233 or equivalent.

Cr. 3.

ENG L302 - Critical and Historical Survey of English Literature II

Representative selections with emphasis on major writers from the rise of romanticism to the present.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

FINA A170 - Women Artists/The Visual Arts

Study of major areas of visual arts in which women have played a substantial part as artists. Major emphasis on women as artists in relationship to the major movements of the time.

Cr. 3.

FINA H101 - Art Appreciation

Objectives: to acquaint students with outstanding works of art and to provide an approach to appreciation through knowledge of purposes, techniques, form, and content. No credit toward a fine arts degree.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H401 - Art Theory IV

An introduction to the three branches of art theory: showing ways in which it has conditioned our concept and expectations of art, how art theory is used in the service of other disciplines, and how it can be used to illuminate events enacted within the actual work of art.

Cr. 3.

Hours

Class 3,

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F254 - Social History of Rock and Roll

A survey of rock and roll music as a uniquely American art form, traced from its roots in Anglo- American folk and country music and African American gospel and blues through its sundry subsequent phases, each viewed within its defining aesthetic, sociocultural, historical, political, and technoeconomic contexts.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Because of significant overlapping content, students may count either FOLK F254 or MUS Z201 toward the Area IV requirement, but not both.

FREN F310 - Topics in French Literature in Translation

Readings in English translation novels, plays, essays, and poetry or other works that reflect a specific topic chosen by the instructor.

Cr. 3.

Notes

No credit in French.

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HON H101 - Ideas and Human Experience

A discussion class with limited enrollment and an interdisciplinary foundation. Topics vary and are usually focused on personal growth and exploration. Students are encouraged to think for themselves and look in unusual places to find the answers to life's tough questions. May be repeated for credit.

Cr. 1-3.

Notes

Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

IDIS G104 - Freshman Seminar/ Humanistic Thought

Introduction to major questions, traditions, and tools of humanistic inquiry. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area IV. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

ILCS I208 - International Cinema

In this course students will study international cinema in order to increase their critical thinking, analytical, and communicative ability through reading and writing about films made outside of the United States. It will focus on the international filmmakers that work consciously to express their own sense of national identity.

Cr. 3.

-with topic "Contemporary Problems and Issues"; formerly INTL I208

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

INTR 320 - Architecture and Urban Form in the Modern World

A survey of architectural and engineering developments of the 20th century.

Preparation for Course

P: ARET 210 or INTR 220.

Cr. 3.

INTR 330 - Culture and Design: A Cross-Culture Comparison of Architecture

Architecture and the built-environment reflect political, economic, social, and cultural aspects of a society. Cross-cultural comparisons of architectural design philosophy are explored through the study of design principles such as space and order, form and color, architecture semiotics and building components. The comparison is between Western and Eastern architecture with the same type of building. The interrelationship of architecture and culture is examined through design theories and philosophy by the expression of architecture digital photos and videotapes. Papers, presentation, group studies and non-written projects are required.

Preparation for Course

P: COM 114 or ENG W131.

Cr. 3

MUS N101 - Music for the Listener - Honors

Survey course designed to introduce nonmusic major to materials, history, and literature of Western art music from the earliest times to present. Emphasis upon developing listening skills and an awareness of different musical styles through study of major works of outstanding composers of each historical period.

Cr. 3.

MUS Z101 - Music for the Listener

Introduction to the elements of music through the mode of listening and a historical survey of the way those elements have been used in various types of musical compositions. For non-music majors.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

MUS Z201 - History of Rock and Roll Music

A survey of the major trends, styles, and genres of rock music from the earliest recordings to the present day, focusing on the work of the artists and groups who have proven to be of the most enduring significance. Credit given for nonmusic majors only.

Cr. 3.

Because of significant overlapping content, students may count either FOLK F254 or MUS Z201 toward the Area IV requirement, but not both.

MUS Z393 - History of Jazz

A survey of periods, major performers and composers, trends, influences, stylistic features, and related materials in the history of jazz music.

Cr. 3.

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 112 - Religion and Culture

A study of traditional patterns of encounter with the sacred. Topics considered will typically include the secularization of Western culture and religious elements in contemporary American culture.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PHIL 351 - Philosophy of Science

This course examines topics at the intersection of science and philosophy. Primary topics: fundamental principles of the scientific method; the nature of scientific change; the epistemology of science and the debate over scientific realism; scientific convergence and the future of science; consilience of science with nonscience; science and pseudoscience; science and human values. Secondary topics: the strange world of contemporary physics; ethical issues in scientific research; science and religion; science and education; science and the meaning of life.

Cr. 3.

REL 112 - Religion and Culture

An introduction to modern academic theories regarding the origin, form, and function of religion in human life supported by case studies drawn from various world religious traditions. Credit not given for both REL 112 and

PHIL 112.

Cr. 3.

REL 301 - Islam

Introduction to the "religious world" of Islam: the Arabian milieu before Muhammad's prophetic call, the career of the Prophet. Qur'an and hadith, ritual and the "pillars" of Muslim praxis, legal and theological traditions; mysticism and devotional piety, reform and revivalist movements.

Cr. 3

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V: Creative and Artistic Expression

Course List:

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W203 - Creative Writing

Focus in either poetry or fiction writing. Exploration in imaginative writing with focus on one specific genre. May be repeated once for credit with a different topic.

Preparation for Course

P: W131 or equivalent.

Cr. 3.

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

FINA N108 - Introduction to Drawing for Nonmajors

Introduces the student to the basic elements of drawing. Line, shape, value, and perspectives will be studied before moving on to the more complex use of color. Landscape and still life will be the source of subject matter for the semester.

Cr. 3.

Hours

Class 3, Studio 3,

FINA S105 - Introduction to Design

Introduction to Design for nonmajors introduces students to the basic elements of design. Line, shape, space, focus, and color are the elements covered in class. Formal and informal systems of design will be explained in classroom exercises.

Cr. 3.

Hours

Class 3, Studio 3,

FINA S165 - Ceramics for Nonmajors

Introduction to ceramics is a creative art course in which students use handbuilding techniques to create tile, pottery form, and ceramic sculpture. Various lowfire surfaces and firing atmospheres will be explored. Slide lectures will accompany projects, exposing students to the work of various cultures and ceramic artists. Classroom projects and discussions will promote a greater understanding of form and creative processes.

Cr. 3.

Hours

Class 3, Lab. 3,

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

MUS Z140 - Introduction to Musical Expression

Introduction to the fundamentals of music and their appreciation in the process of writing and performing music. Students will learn to read musical notation and develop skills in playing folk guitar as an accompaniment instrument. Students must provide their own guitar.

Cr. 3.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

VCD N274 - Digital Imaging

A course designed for non-art majors. Students will learn to apply basic art and design fundamentals to the personal computer. Areas such as page layout and illustration will be covered in assigned problems.

Cr. 3.

Hours

Class 3, Studio 3,

VCD S105 - Introduction to Design

Cr. 3.

Area VI: Inquiry and Analysis

All inquiry and analysis courses have a prerequisite of "Completion of foundation skills requirement." Some courses may also have specific prerequisites. Inquiry and Analysis courses are not open to students with freshman status.

Course List:

- HIST H373 - History of Science and Technology I

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

BIOL 304 - Major Ideas in Biology (Honors Course)

Major ideas in biology such as immunization, spontaneous generation, inheritance, evolution, genetic engineering, and ecology will be examined. Students will analyze the methodology and results that lead to understanding these ideas. Small-group discussion, oral presentations, and written papers will be used to study the impact of these ideas on other areas such as economics, politics, or religion. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: an introductory course in biology.

Cr. 3.

BIOL 317 - Addictions: Biology, Psychology, and Society

It is an interdisciplinary, introductory course taught by a team from the biology and psychology departments. The course will focus on using the processes of addiction to alcohol, marijuana, nicotine, and psychomotor stimulants to teach the basics of biological and psychological sciences. Example topic areas include neurological/ brain function, impact on cognitive function, biochemistry, genetics, immunology, emotion and motivation, learning and memory, physiology and pharmacology, and the psychosocial aspects of addictions. Cannot be used as A or B elective for biology majors.

Preparation for Course

P: Placement at or above ENG W131.

Cr. 3.

BIOL 326 - Heredity: A Human Perspective (Honors Course)

Advances in genetics will be examined using diverse topics such as cloning and alteration of human genes and/or embryos, genetic screening, and genetic manipulation of other organisms. Students will gain understanding of basic methods utilized by geneticists and learn to critically analyze published data. Reading the discussions related to ethical, social, political, and economic issues will help assess the impact of current developments in genetics. Research on a selected topic leading to an oral presentation and a term paper will provide opportunities for synthesis. Some hands-on laboratory experience will also be an integral part of this course. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: 100, junior standing, and completion of General Education Area I or instructor's permission.

Cr. 3.

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CMLT C333 - Romanticism

The rise of Romantic tendencies in 18th-century Europe (pre-Romanticism); the Romantic revolution in early 19th-century Western literature. Such authors as Goethe, Chateaubriand, Wordsworth, Byron, Novalis, Hoffman, Hugo, Poe.

Preparation for Course

P: ENG L202 or W233 or equivalent; R: CLAS C205.

Cr. 3.

Variable Title

(V.T.)

CMLT C337 - The 20th Century: Tradition and Change

The search for forms and language to express new understanding of art and reality in the era of modernism.

Preparation for Course

P: ENG L202 or W233 or equivalent; R: CLAS C205 or 3 credit hours of literature..

Cr. 3.

Variable Title

(V.T.)

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

CS 306 - Computers in Society

Case study analysis of the social impacts of computerization and networking. Topics include computer ethics, crime, privacy, security, reliability, and vulnerability. Other topics include cyberphilia, cyberphobia, censorship, depersonalization, disenfranchisement, automated decision making, artificial intelligence, cognitive science, and ergonomics. Students present projects applying these issues to today's environment.

Preparation for Course

C: junior class standing.

Cr. 3.

ECON E306 - Undergraduate Seminar in Economics

Discussion and analysis of contemporary economic problems and policies. Different topics may be offered each semester. May be repeated twice for credit if topics differ. Papers and other written and oral assignments required.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

with topic "Contemporary Problems and Issues"

ECON E340 - Introduction to Labor Economics

Examines theories of wage and employment determination. Analysis of the impact of unions and other institutional factors on these theories; labor market imperfections; labor mobility; impact of government policies on labor behavior.

Preparation for Course

P: ECON E201; introductory statistics; junior class standing.

Cr. 3.

ECON E346 - Economics of Gender

This course examines the pattern of employment, unemployment, earnings, occupations, and income categories of gender, race-ethnicity, and class as a conceptual framework to understand the emerging patterns of economic well-being. The theoretical explanations offered by neoclassical economics as well as political economy will be explored to understand work, wages, and discrimination. The course emphasis is on contemporary American society.

Preparation for Course

P: ECON E200 or E201 or approval of instructor.

Cr. 3.

EDUC E346 - Discipline/Parenting for Young Children

A study of discipline of children in early childhood settings for interaction in teaching and learning environments with an emphasis on working with parents and teachers.

Cr. 3.

EDUC K410 - Trends and Issues in Special Education

Provides students with an overview of current movement in the field of special education. Major emphasis is on application and implication of principles mandated by P.L. 94-142 and Section 504 of the Rehabilitation Act of 1973.

Preparation for Course

P: K205 or K206 or permission of instructor.

Cr. 3.

ENG L399 - Junior Seminar

Small seminar on various topics, encouraging independent thinking and research methods. May be repeated with a different topic for a maximum of 6 credit hours.

Preparation for Course

P: ENG L202.

Cr. 3.

Variable Title

(V.T.)

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

FILM K390 - The Film and Society

Film and politics; censorship; social influences of the cinema; rise of the film industry. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

R: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-4.

Variable Title

(V.T.)

FOLK F305 - Asian Folklore

Forms and functions of folklore, folklife, or folk music in the traditional and developing societies of Asia. Folklore as a reflection of culture. Relationship between folklore forms and belief systems in Asia. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G305 - Geologic Fundamentals in Earth Science

Introductory course for advanced students. Earth materials, earth processes, geological principles. Emphasis on relationships between geology and other physical sciences.

Cr. 3-5.

Hours

Class 2-3, Lab. 0-3,

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

HIST A313 - Origins of Modern America

Reconstruction, industrialism, immigration, urbanism, culture, foreign policy, progressivism, World War I.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST D426 - History of Balkans: 1914 to Present

First World War in the Balkans; politics, economies, and societies in the Balkan countries during the 20th century; Balkan unity movements; international events and World War II; rise of socialism in the region; era of cold war and detente; revolutions of '80s and '90s.

Cr. 3.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HON H300 - Interdepartmental Colloquium

Honors seminar focusing on issues in the humanities from an interdisciplinary perspective.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

HON H302 - Interdepartmental Colloquium

Honors seminar focusing on topics in the natural and mathematical sciences areas from an interdisciplinary perspective.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the science and mathematics requirement. Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

LING L303 - Introduction to Linguistic Analysis

Introduction to basic concepts of linguistic analysis, exemplifying the general principles of structural approaches to the study of language. Application of analytical methods to problems in phonology, syntax, and semantics.

Preparation for Course

P: L103.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

MUS L418 - Psychology of Music

Introduction to the physical, psychological, and physiological aspects of sound and music. Survey of the theories related to sound production, acoustics, music perception and learning, and the effects of sound and music on the behavior of humans. Overview of music psychology research, and the scientific method and research techniques.

Preparation for Course

P: junior standing or permission of instructor.

Cr. 3.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 496 - Leading Change: Theory and Practice

This course is designed to assist students in integrating leadership theories and modeling change initiatives. A final synthesis project is required.

Preparation for Course

P: OLS 252 and senior class standing.

Cr. 3.

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

PHYS 302 - Puzzles, Strategy Games, and Problem Solving in the Physical Sciences

This course will explore scientific problem solving by comparing and contrasting it with problem solving in two other domains: puzzles and strategy developing representations, defining the problem, using heuristics, and evaluation solutions. Strategy games will be used as a way to practice problem-solving skills in a domain that can be quickly learned. No credit toward a physics major.

Preparation for Course

P: successful completion of General Education Areas I and II.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 326 - Motion, Biomechanics and Animation

The course will focus on Newtonian physics of motion and ultimately its application in biomechanics and how an understanding of physics applies to 3-D computer animations. In particular, motion will be explored to understand how to make animations that look and feel correct. Topics to be covered include Newton's three laws of motion, conservation of energy and momentum, and rotational dynamics. The course will investigate these phenomena through observation, experimentation, the use of 3-D graphics programs, and simulations.

Preparation for Course

P: successful completion of General Education Areas I and II or instructor permission.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

POLS S401 - Studies in Political Science

Equivalent of Y401 for honors students.

Cr. 3.

Variable Title

(V.T.)

POLS Y306 - State Politics in the United States

Comparative study of politics in the American states. Special emphasis on the impact of political culture, party systems, legislatures, and bureaucracies upon public policies.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y307 - Indiana State Government and Politics

Constitutional foundations, political development, organizational and functional process and growth, and current problems of Indiana government as a focal point for understanding role of states as instruments of social policy. Readings, case studies, problems.

Cr. 3.

POLS Y335 - Western European Politics

Development, structure, and functioning of political systems in Western Europe. Political dynamics of European integration.

Cr. 3.

POLS Y339 - Middle Eastern Politics

Political culture and change in selected Middle Eastern and North African countries. Topics include political elites, traditional cultures, modern political ideology, institutions of political control, conflict management, and social reform policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y340 - East European Politics

Compares political change in the East European states, and emphasizes the legacies of authoritarianism and communism and the post-communist transition to democracy. Topics include the building of political institutions, the inclusion of citizens into the polity, the reform of the economy, the management of ethnic and social conflicts, and integration into the European Union. Eligible for graduate credit.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) Requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y350 - Politics of the European Union

Study of the politics of the European Union (EU). Assesses past and present dynamics of economic and political integration in Europe, the structure and work of European Union institutions, and EU public policies such as the Single Market, the common currency, common foreign and security policy, and trade.

Cr. 3.

POLS Y360 - U.S. Foreign Policy

Mechanics of the foreign-policy-making process in the United States. Analysis of competing concepts of the national interest; isolationism, the Open Door, Monroe Doctrine, national security, containment, military and political alliances, the new nations; their relation to substantive policies and to the character of American democracy.

Cr. 3.

POLS Y376 - International Political Economy

Theories about the interaction between the international economic and political systems are the subject of this course. Specific topics covered will include (among others) the politics of trade, aid, foreign investment, and international monetary affairs; theories of dependency and imperialism; the politics of international competition in specific industries; the stability/instability of international economic regimes.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

POLS Y490 - Senior Seminar in Political Science

Open to senior majors and others with consent of instructor. Readings and discussion of selected problems; research paper ordinarily required. May be repeated once for credit with a different topic.

Preparation for Course

P: Y205 or consent of instructor.

Cr. 3.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

PSY 317 - Addictions: Biology, Psychology and Society

It is an interdisciplinary, introductory course taught by a team from the biology and psychology departments. The course will focus on using the processes of addiction to alcohol, marijuana, nicotine, and psychomotor stimulants to teach the basics of biological and psychological science. Example topic areas include neurological/brain function, biochemistry, genetics, immunology, emotion and motivation, learning and memory, physiology and pharmacology, and the psychosocial aspects of addictions.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 334 - Cross Cultural Psychology

Examination and restructuring of the major psychological principles from a cultural perspective. A study of the diversity of development of the individual across Asian, African American, Latino/a, and American Indian/Alaskan Native cultures will be presented. The experience of self, role of the family and community, and the psychology of prejudice will be emphasized. Issues related to the workplace, religion, sexual orientation, ability status, and gender will also be discussed. It will be assumed that the student already has some familiarity with major psychological theories and terminology.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

PSY 345 - Psychology of Women

Theories and current research on the psychological nature of women and their roles in society, including topics such as sex differences and similarities, sex-role socialization, sex-role stereotyping, female sexuality, achievement motivation, role conflict, mental-health issues, feminist therapy, rape, menstruation, pregnancy, childbirth, motherhood, and topics of related interest.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 353 - Social and Personality Development in Children

An examination of major theories and current research on the development of social behavior and personality in children. Parent-child and family relationships, peer relations, aggressive and prosocial behavior, gender typing, self-concepts, moral reasoning, social cognition, and other topics are considered.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 362 - Human Development II: Adolescence

A behavioristically oriented analysis of social, personality, and cognitive development in adolescence and youth.

Preparation for Course

P: Sophomore class standing and PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 365 - Development of Gender Roles in Children

Considers basic concepts and the varying theoretical interpretations for the development of gender roles with special attention given to recent empirical findings with children. Measures used in this area will be demonstrated in class and critically evaluated.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 371 - Death and Dying

A multidisciplinary, empirically-based consideration of emotions, behaviors, and cognitions related to death and the process of dying. Topics include cultural and historical differences in concepts of dying, grief, and bereavement; individual differences related to preparation, adjustment, and coping, as well as discussion of special topics (e.g., hospice care, physician-assisted suicide, media coverage of death and dying).

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 444 - Human Sexual Behavior

A survey of research in human sexuality with the primary focus at the social psychological level. Problems in sex research and theoretical issues will be considered.

Preparation for Course

P: Junior class standing and PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 460 - Advanced Abnormal Psychology

An advanced course in abnormal psychology allowing for more thorough coverage of selected disorders that were introduced in PSY 350. Topics covered will typically include the affective disorders, schizophrenia, anxiety and stress-related disorders, and personality disorders; but may vary somewhat with each offering of the course. Outside material related to description and diagnostic indicators of the disorders, latest research on etiology, and current treatment methods will be included.

Preparation for Course

P: PSY 350.

Cr. 3.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S314 - Social Aspects of Health and Medicine

Group characteristics in the causation, amelioration, and prevention of mental and physical illness, and the social influences in medical education, medical practice, and hospital administration.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S315 - Work and Occupations

Treats work roles within such organizations as factory, office, school, government, and welfare agencies; career and occupational mobility in work life; formal and informal organizations within work organizations; labor and management conflict and cooperation; problems of modern industrial workers.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S316 - The Family

Cross-cultural perspectives on family systems; structure and process of the conjugal family in modern and emerging societies. Focus on relationships of the family to other subsystems of the larger society and on interaction within the family in connection with these interrelationships. Emphasis on development of systematic theory.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S320 - Deviant Behavior and Social Control

Analysis of deviance in relation to formal and informal social processes. Emphasis on deviance and respectability as functions of social reactions, characteristics of rules, and power and conflict.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S325 - Criminology

A study of the patterns of crime, strategies for control, and theories of crime causation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S328 - Juvenile Delinquency

A study of the patterns of juvenile delinquency, strategies for control, and theories of juvenile delinquency causation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S360 - Topics in Social Policy

Specific topics to be announced, e.g., environmental affairs, urban problems, poverty, population problems. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title
(V.T.)

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

SPEA H422 - The Social Epidemics: AIDS, Violence, and Substance Abuse

This course examines HIV/AIDS, violence, and substance abuse in the context of racial, gender, sexual orientation, and class dynamics that may underlie the way these pathologies affect certain populations. Emphasized is the recognition that how we define disease and causation can influence how we attempt to find a cure.

Cr. 3.

SPEA V348 - Management Science

Introduction to management-science models and methods for policy analysis and public management. Methods include decision analysis, linear programming queuing analysis, and simulation. Computer-based applications are included. Prior familiarization with computers is recommended, though not required.

Preparation for Course

P: K300, MA 153 or MA 213.

Cr. 3.

SPEA V371 - Financing Public Affairs

A survey of economic and political theories of market failures, public expenditure evaluation, economic stabilization, systems of redistribution and fiscal federalism. Examples and applications to contemporary government decisions.

Preparation for Course

P: V170, ECON E201, E202.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

SPEA V450 - Contemporary Issues in Public Affairs (Honors Course)

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit under different topics.

Preparation for Course

P: honors eligibility or consent of instructor, and one or more of the following courses are recommended: HIST H105, HIST H106, SOC S161, POLS Y103, and/or SPEA V170.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Equivalent of SPEA V450 for honors students.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Associate

Architectural Engineering Technology (A.S.)

Program: A.S.

Department of Manufacturing & Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.
- Employing concepts of architectural theory and design in a design environment.
- Utilizing modern instruments, methods and techniques to produce A/E documents and presentations.
- Conducting standardized field and laboratory testing on construction materials.
- Utilizing modern instruments and research techniques for site development and building layout.
- Estimating material quantities for technical projects.
- Utilizing codes, contracts and specifications in design, construction and inspection activities.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employing productivity software to solve technical problems.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
 - Conduct, analyze, and interpret experiments than apply results.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - In-class projects requiring design decisions.
 - Student design projects for external presentation.
- An ability to function effectively on teams.

- Actively participate in team activities during and outside class.
 - Orally and graphically present teams results.
- An ability to identify, analyze and solve technical problems.
 - Determine forces and stresses in elementary structural systems.
 - Calculate basic loads & demands in mechanical/electrical systems.
 - Solve problems in math, statistics, and physics courses.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
 - Demonstrate effective graphic communication skills
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Require library research and reporting.
 - Require Web research and reporting.
- An ability to understand professional, ethical and social responsibilities.
 - Demonstrate knowledge of professional code of ethics.
 - Service learning component.
- A respect for diversity and knowledge of contemporary professional, societal and global issues.
 - Social studies elective.
 - Exposure to other cultures building practices.
- A commitment to quality, timeliness, and continuous improvement.
 - Quality and timeliness is required aspect of course.
 - Course evaluation performed each semester.

Mission

To provide employers and the public of northeast Indiana with educated, technologically equipped graduates, able to serve the varied construction industries (represented by architectural, civil, and construction engineering technologies, and interior design) in advancing the solutions to problems facing the public and private sector.

Goals

- To provide education of the traditional and returning adult student for career success in the construction industry
- To develop a respect for diversity and a knowledge of contemporary professional, societal, and global issues with an understanding of professional and ethical responsibilities.
- To be responsive to the ever-changing technologies of the construction industries.
- To instill in students the desire for and ability to engage in lifelong learning.

The breadth of the curriculum will provide leadership potential in addressing problems of the region, its people, and its industries.

This program helps you prepare for technical employment with architects, engineers, builders, materials suppliers, and related government agencies. You may work in drafting, architectural detailing, construction expediting, estimating, or sales. Graduates with experience hold jobs as senior drafting personnel, architectural job captains, construction supervisors, and contractors. This program also prepares you to work toward a bachelor's degree in construction engineering technology. The architectural engineering technology program is not a professional architecture program and will not lead to licensure as a registered architect.

The department offers related majors in civil engineering technology and construction engineering technology. All three programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone, 410-347-770. The programs provide problem solving skills, hands-on competency, and required state-of-the-art technical knowledge.

Alumni of the department are employed in all areas of the building industry, including construction; architecture; interior design; civil engineering; land surveying; and state, county, and city governments.

To earn the A.S. with a major in architectural engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and those described below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 11

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

ETCS General Distribution Requirements Credits: 11

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Core and Concentration (Major) Courses Credits: 39

ARET 123 - Construction Graphic Communication

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

ARET 222 - Architectural Engineering Construction II

Preparation of graphic and written documents to construct an intermediate-sized commercial or institutional building. A model may be required. Computer applications.

Preparation for Course

P: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 281 - Environmental Equipment for Buildings I

A survey of basic environmental control parameters of heating, ventilating, air conditioning, plumbing, lighting, electricity, and their equipment (size and shapes) and the physiological effects on mankind. Emphasis placed on definitions, types of systems, and physical characteristics of equipment.

Preparation for Course

P: ARET 124, MA 153.

Cr. 3.

ARET 282 - Environmental Equipment for Buildings II

Continuation of ARET 281 with emphasis on calculation and basic design for heating, ventilating and air conditioning, plumbing, lighting, electrical, and other equipment with laboratory practice applying concepts and calculations to a term project. Term project is the development of mechanical, plumbing, lighting, and power plans for a light commercial building or residence. Computer application.

Preparation for Course

P: ARET 281.

Cr. 3.

Hours

Class 2, Lab. 2.

CET 104 - Elementary Surveying

Fundamental concepts and practical applications related to the measurement of vertical and horizontal distances and angles utilizing steel tapes, automatic levels and theodolites. Computations of grades, traverses, and area. Basic concepts of topography and its uses.

Preparation for Course

C: MA 154 or MA 159 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 266 - Materials Testing

Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.

Preparation for Course

P: STAT 301, C: CET 283.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

ET 190 - Statics

Introduction to fundamentals of applied mechanics, including equilibrium of structures under the influence of forces; trusses; frames; beams; friction; properties of areas; stress and strain in axial systems.

Preparation for Course

P: MA 159 or 154.

Cr. 3.

ET 200 - Strength of Materials

Principles of applied strength of materials, including shear and bending moment; shear and bending stresses; bearing, connections; column analysis; and deflection of beams.

Preparation for Course

P: ET 190.

Cr. 3.

INTR 121 - Freehand Sketching

Drawing in the "freehand" (nonmechanical) method will be presented in pencil, ink, and markers. The course is aimed at the beginning design student. It will utilize objects of interior environment as a means of understanding various drawing principles and familiarize the student with basic rendering techniques.

Cr. 3.

Total Credits: 67

Biology Concentration (A.A.)

Program: Concentration A.A.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply theories and principles to problem solving.

- Provide coursework and advising for students who seek employment after the A.A. degree or who expect to continue their undergraduate education with the intent of earning a B.S. degree in Biology.

The associate of arts degree requires courses that satisfy the IPFW general education program and requirements in the concentration. The degree requires a total of 63 credits, most of which are fulfilled by required courses. If you plan to continue for a bachelor's degree, see Part 5 for B.S. requirements in biology, biology teaching, and medical technology.

Requirements for the Associate of Arts

Credit Requirements for the IPFW General Education Program (Credits: 18)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 37-38
- Additional credits in approved elective courses Credits: 4-12

Total with a graduation GPA of at least 2.00 (60-63)

Concentration Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and

reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Or

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

Two semester, 8 credit sequence in organic chemistry

One of the following Credits: 3-4

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

Or

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Business (A.S.B.)

Program: A.S.B.

SBMS Undergraduate Student Affairs Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

Upon completion of the Associate Degree in Business, students will be able to:

- Identify, define, describe and/or discuss fundamental business terminology and concepts
- Extract, analyze, and summarize data into useful business information
- Demonstrate effective verbal skills
- Demonstrate effective written skills

Business Administration

The A.S.B. option in business administration is a preprofessional degree. The academic program leading toward the degree helps you prepare for careers at the operational level of business.

All credits earned in the business administration option can be applied toward the Bachelor of Science in Business if you qualify for admission to that program.

Degree Requirements

You must satisfy the requirements of IPFW (see Part 8) and the Richard T. Doermer School of Business and Management Sciences (listed in this section) and earn a minimum of 63 credits in courses in (1) general education and (2) general business and economics. The final 15 consecutive credits required for this degree should be completed after you have been admitted to the A.S. program.

To remain in the program and graduate, you must earn a grade of C or better in all ENG writing courses and all business and economics courses, and maintain a cumulative GPA of 2.00 or better. Business and economics courses completed by correspondence are not applicable.

IPFW General Education Requirements (41 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(or an approved substitute with placement beyond MA 153)

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

- Additional credits in Area IV: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Additional General Education Credits: 12

Business and Economics Requirements (22 credits)

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K200 - Computer Literacy Concepts for Business

Orientation to microcomputer hardware, software markets, and operating systems. Emphasis on end-user computer responsibilities for managers.

Cr. 0.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

Note

As the requirements for the Bachelor of Science in Business change, the requirements for the A.S.B. option in business administration are also likely to change in order to ensure that the credits in this option can be applied toward the B.S.B.

Total Credits: 63

Chemical Methods (A.S.)

Program: A.S.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

Students will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record keeping. They will master the use of a variety of modern instruments and will become proficient in fundamental organic synthetic methods

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a term environment.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- Analytical Chemistry
 - Analytical methods (classical and instrumental)
 - Sensitivity and detection limits
 - Statistical treatment of data
- - General Chemistry
 - Semi-quantitative microscopic model of the physical universe based on macroscopic observations
 - Terminology
 - Periodic relationships
 - Elementary computational skills
 - Introductory laboratory skills
- - Organic Chemistry
 - Chemical bonding and structure including valence bond and molecular orbital theories
 - Reactivity, reaction mechanisms, and properties of the important functional groups
 - Synthesis
 - Spectroscopic determination of structure
 - Material science and bio-organic chemistry

The Associate of Science with a major in chemical methods program helps you prepare for a career as a chemical technician. Many industries have found it desirable to employ persons with a basic knowledge of chemistry. Such industries may be concerned with implementing or monitoring safe waste-disposal procedures, conducting standardized testing that uses routine chemical procedures, observing and measuring properties of materials following some type of compounding procedure, or recording data and making calculations that require some knowledge of chemistry. The A.S. with the major in chemical methods is a technical degree designed to meet such needs and is not recommended for students who wish to pursue a bachelor's program.

To earn the A.S. with a major in chemical methods, you must fulfill the requirements of IPFW (see Part 8) and complete the following courses. In addition, you must earn a grade of C or higher for each of the chemistry core courses.

Chemistry Core

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Supporting Courses

- Credits in computer science Credits: 3–4
- MA 151 Algebra and Trigonometry Credits: 5

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Electives Credits: 12–13

Total Credits: 61–63

Civil Engineering Technology (A.S.)

Program: A.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.
- Utilize graphic techniques to produce engineering documents.
- Utilize modern surveying methods for land measurement and/or construction layout.
- Estimate material quantities for technical projects.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employ productivity software to solve technical problems.

- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
 - conduct standardized field and laboratory testing of materials.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - In-class projects requiring design decisions.
- An ability to function effectively on teams.
 - Actively participate in team activities during and outside class.
 - Resolve problems as they arise.
- An ability to identify, analyze and solve technical problems.
 - Determine forces and stresses in elementary structural systems.
 - Solve pressure flow problem.
 - Solve open channel flow problem
 - Close a traverse survey.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
 - Demonstrate effective graphic communication skills.
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Require library research and reporting.
 - Require Web research and reporting.
- An ability to understand professional, ethical and social responsibilities.
 - Demonstrate knowledge of professional code of ethics.
 - Demonstrate knowledge of professional code of ethics.
 - Service learning component.
- A respect for diversity and a knowledge of contemporary professional, societal and global issues.
 - Social studies elective.
 - Humanities elective.
- A commitment to quality, timeliness, and continuous improvement.
 - Quality and timeliness is required aspect of course.
 - Course evaluation performed each semester, software updates.

To earn the A.S. with a major in civil engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and those described below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 11

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

ETCS General Distribution Requirements (11 credits)

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Core and Concentration (Major) Courses (40 credits)**ARET 123 - Construction Graphic Communication**

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

CET 104 - Elementary Surveying

Fundamental concepts and practical applications related to the measurement of vertical and horizontal distances and angles utilizing steel tapes, automatic levels and theodolites. Computations of grades, traverses, and area. Basic concepts of topography and its uses.

Preparation for Course

C: MA 154 or MA 159 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 108 - Route Surveying and Design

Preliminary and construction surveys for route location. Calculation and field work for simple and easement curves, grade lines, and slope stakes. Preparation of plans, profiles, and cross-sections from field survey data earthwork estimates. Computer applications.

Preparation for Course

P: 104, ARET 123, and a C or better in MA 159. C: computer science elective.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CET 206 - Construction Surveying

Application of surveying skills relevant to the construction field. Projects include layout of commercial and/or industrial buildings, transfer of horizontal and vertical control, establishment of lines and grades, triangulation, etc. Instruments used will include total stations, data collectors, etc.

Preparation for Course

C: CET 108.

Cr. 3.

CET 209 - Land Surveying and Subdivision

Subdivision planning, calculations and plotting, water-main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles. Computer applications.

Preparation for Course

P: CET 206.

Cr. 3.

Hours

Class 1, Lab. 6.

CET 253 - Hydraulics and Drainage

Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage determination.

Preparation for Course

C: CET 181.

Cr. 3.

CET 266 - Materials Testing

Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.

Preparation for Course

P: STAT 301, C: CET 283.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

Total Credits: 68

Commercial Art (A.S.)

Program: A.S. in Commercial Art

Department of Visual Communication and Design

College of Visual and Performing Arts

Visual Arts Building 213 ~ 260-481-6709 ~ www.ipfw.edu/vpa/vcd

The student learning outcomes for the degree are as follows:

Visual communication and Design provides an exceptional professional degree program which combines creative development in an artistic discipline with career preparation. Visual Communication and Design students demonstrate:

- Effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
- Visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
- Critical thinking and problem solving while also evaluating their ideas and technological competencies.
- Artistic and scholarly collaboration with continuous personal growth to the highest levels of personal integrity and professional ethics.
- Knowledge and skills based upon an understanding of historical traditions that formed ones own and other cultures.
- A commitment to mutual respect through free and open visual inquiry and communication.

This two-year program helps an individual prepare for entry-level employment opportunities in the applied arts, including illustration, layout, package design, display/exhibit design, and computer imaging. An exit portfolio review is required of all A.S. degree seeking students. Upon completion of the A.S. program and a successful portfolio presentation, a student may choose to enter the B.F.A. program in computer art, graphic design, or photography.

To earn the A.S. in commercial art, students must fulfill the requirements of IPFW and the College of Visual and Performing Arts, complete curriculum requirements, and earn a grade of C or better in each required VCD course.

IPFW General Education Requirements Credits: 18

Area I—Linguistic and Numerical Foundations

See Part 2 General Education Requirements for approved courses

- *Quantitative reasoning course Credits: 3*

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Areas II–IV Credits: 9

See Part 2 General Education Requirements for approved courses

Foundations Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Art History Credits: 6

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Studio Credits: 27

- Studio electives in VCD or FINA Credits

VCD P253 - Principles of Graphic Design I

Familiarity with the visual vocabulary and the elements of the visual language. The expression of the elements of line, shape, texture, space, and color will be developed through a series of exercises. Different problems in building visuals provide training that artists need to make individual, yet clear, expressive statements.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P254 - Principles of Graphic Design II

Continuation of P253 with emphasis on more involved projects utilizing typography, layout, symbols, and illustration: Calendars, advertising campaigns, publications, typographical/illustrated books, and multicolor projects.

Preparation for Course

P: P253.

Cr. 3.

Hours

Studio 3,

VCD P261 - Layout and Finished Art

Assignments beginning with rough comprehensives, completion through finished art work, paste-ups, and art for reproduction.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P271 - Illustration I

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P272 - Illustration II

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be

encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Total Credits: 63

Dental Hygiene (A.S.)

Program: A.S. in Dental Hygiene

Department of Dental Education

College of Health and Human Services

Neff Hall 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the degree are as follows:

- Demonstrate breadth of knowledge in principles of social sciences, basic and dental sciences.
- Demonstrate proficiency in assessing, planning, treating, and evaluating oral conditions and diseases.
- Interpret, evaluate and contribute to current dental research and apply that knowledge to demonstrate dental hygiene skills necessary for life-long learning.
- Demonstrate the highest levels of personal integrity and professional ethics in the delivery of dental hygiene services.
- Promote the dental hygiene profession through service learning activities, affiliations with professional organizations, and partnerships with the community.
- Design, implement, and evaluate community oral health programs appropriate for the diverse, multicultural communities in northeastern Indiana.
- Demonstrate knowledge and skills necessary to be responsible dental professionals and leaders in local, regional, national, and international organizations and communities.
- Demonstrate proficiency in critical thinking, reasoning, questioning, and decision-making skills.
- Demonstrate the written, oral, and multimedia skills necessary to communicate effectively in diverse professional and educational settings for multicultural audiences.

This program involves one year of prerequisite courses and two years of dental hygiene courses. The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association.

An A.S. in Dental Hygiene prepares the student for a career as a dental-health professional who specializes in educational, preventive, and therapeutic oral healthcare. The program combines didactic, laboratory, and clinical courses. Graduates are eligible to take national, state, and regional licensing examinations. Dental hygienists who graduate with an associate degree can work in private dental offices, dental clinics and hospitals, public health facilities, and dental research facilities.

Admission

Admission to the Dental Hygiene program is limited and competitive, and admission to IPFW does not confer acceptance to the Dental Hygiene program. To be admitted to the A.S. program, prospective dental hygiene students must first be admitted to IPFW, complete the prerequisite courses listed below (or equivalent courses at another accredited college or university), then apply separately to the Dental Hygiene program. Applications for acceptance into the Dental Hygiene program **MUST BE received by February 1**, for admission into the program in the following fall semester.

Applicants must maintain a GPA of 3.3 or higher for these prerequisite courses. Meeting the minimum GPA does NOT guarantee a position in the program. Applicants are ranked and accepted each year based on their prerequisite GPA. Therefore, the GPA necessary for admission varies each year with the applicant pool. Admission is competitive and an overall GPA of at least 3.6 or higher is recommended.

Prerequisite Courses

To apply for the A.S. in dental hygiene program, you must complete the following prerequisite courses by May 25 of the application year with a cumulative GPA of 3.3 or higher:

- Prerequisite courses must be completed with a grade of "C-" or better. Courses graded on a pass/fail option will not be considered.
- Required courses may be repeated only one time, with the most recent grade used in the prerequisite GPA calculation.
- Credits in human anatomy and physiology and chemistry must be completed within five years of admission to the professional program. Credits in English composition, speech, psychology, and sociology will be accepted for 10 years. Outdated courses must be retaken.
- Advanced Placement (AP) courses in English and psychology are acceptable, if AP scores are 4.0 or higher. No other AP courses will be accepted.
- Transfer courses accepted by IPFW as "undistributed" must be evaluated by the applicable department (i.e. chemistry or biology) before they are accepted as prerequisite courses.

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 26**Class Selection Process****Special Academic Regulations**

Acceptance into the Dental Hygiene program is contingent upon an applicant's ability to meet the following additional requirements:

- Demonstrate compliance with the College of Health and Human Services Technical Standards.
- Successful completion of a specified background check at student's expense.
- Submit military discharge papers, if applicable.
- Complete Special Academic Regulations for Students in Dental Hygiene as listed in Dental Education Part 5 .

University Preference

Priority consideration will be given to students who have completed the required pre-dental hygiene courses at IPFW or another Indiana University or Purdue University campus.

Program Requirements

After acceptance into the program, you must fulfill the requirements of IPFW (see Part 8) and Dental Education (Part 4), and satisfactorily complete the following courses:

NOTE: It is recommended that microbiology (BIOL 220) be completed prior to beginning the Dental Hygiene program. Microbiology taken more than five years prior to admission into the professional program must be retaken.

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

DAST A112 - Dental and Medical Emergencies and Therapeutics

A course including recognition and clinical experience of systemic emergencies. Comprehensive study of the physiological, toxicological, and therapeutic effects of drugs on living organisms, with emphasis on their rational application in the treatment of disease. Content includes discussions of drugs that are widely prescribed by physicians and dentists.

Preparation for Course

P: DAST A111.

Cr. 2.

DAST A300 - Special Topics in Dental Education

An advanced course for dental education majors. Supervised reading or projects on approved topics in dentistry. Hours, subject matter, and evaluation to be determined by faculty.

Preparation for Course

P: admission to dental assisting, dental hygiene, or dental laboratory technology program, and chair's permission.

Cr. 1-4.

DHYG H211 - Head and Neck Anatomy

A detailed study of the anatomy of the head and neck. Some attention is given to oral embryology and the growth of tooth structure.

Cr. 2.

DHYG H214 - Oral Anatomy

A study of the morphology, structure, and function of deciduous and permanent teeth and surrounding tissues, also including osteology of maxilla and mandible, nerve and vascular supply of teeth, muscles of mastication, with reinforcing laboratory clinical application.

Cr. 3.

Variable Title
(V.T.)

DHYG H215 - Pharmacology and Therapeutics (lecture)

Actions and uses of drugs and theory of anesthetics; emphasis on drugs used in dentistry.

Cr. 2.

DHYG H216 - Chemistry and Nutrition- First Year

Specific ideas in chemistry are correlated with working principles in dentistry. Previous knowledge of chemistry required. Dental aspects of nutrition and dietetics are given special attention.

Cr. 2-3.

DHYG H217 - Preventive Dentistry

Detection and prevention of dental diseases.

Cr. 2.

DHYG H218 - Fundamentals of Dental Hygiene (lecture and lab)

An introduction to the dental and dental hygiene professions, including the basic didactic, laboratory, and clinical practice for the performance of dental hygiene services.

Cr. 5.

Hours
Class 3, Lab 4.

DHYG H219 - Clinical Practice I

Application of dental prophylaxis technique to child and adult patients; clinical experience in oral inspection of hard and soft tissues; taking complete medical and dental histories; fluoride application procedures; X-ray exposure and development; patient education; sterilization techniques.

Preparation for Course
P: DHYG H218.

Cr. 3-4.

Hours

Class 1, Clinic 9.

DHYG H221 - Clinical Dental Hygiene Procedures

Clinical assignment for instruction and experience in performing dental hygiene services.

Cr. 1-2.

DHYG H301 - Clinical Practice II

Continuation of H219, including taking of study models, dietary surveys, application for other preventive measures, root planning and periodontal charting; the inclusion of expanded functions of the hygienist. H301 must precede H302.

Preparation for Course

P: DHYG H219.

Cr. 4-5.

Hours

Class 1, Clinic 12.

DHYG H302 - Clinical Practice III

Continuation of H219, including taking of study models, dietary surveys, application for other preventive measures, root planning and periodontal charting; the inclusion of expanded functions of the hygienist. H301 must precede H302.

Preparation for Course

P: DHYG H219.

Cr. 4-5.

Hours

Class 1, Clinic 12.

DHYG H303 - Radiology (lecture and lab)

Principles associated with production of X-rays and manipulation of X-ray equipment.

Cr. 1-2.

Hours

Class 2, Lab 2.

DHYG H304 - Oral Pathology

Developmental abnormalities and acquired disorders of teeth and surrounding structure.

Cr. 2.

DHYG H305 - Radiology Clinic I

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1-2.

Hours

Class 1, Clinical 3.

DHYG H306 - Radiology Clinic II

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1.

Hours

Class 1, Clinic 3.

DHYG H307 - Radiology Clinic III

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1.

Hours

Class 1, Clinic 3.

DHYG H308 - Dental Materials

Composition, physical and chemical properties of materials used in dentistry with opportunity for experience in their manipulation.

Cr. 2-3.

Hours

Class 1, Lab 2.

DHYG H309 - Practice of Community Dental Hygiene

Supervised field experience in a school health program.

Cr. 2.

Hours

Class 1, Lab. 2,

DHYG H320 - Practice Management, Ethics, and Jurisprudence

The study of the organization, administration, and prudent operation of professional and financial resources for a successful dental practice in a community.

Cr. 1-2.

DHYG H321 - Periodontics

A study of periodontal disease including the anatomy, classification, etiology, treatment, and relationship to systemic conditions.

Cr. 1-2.

DHYG H344 - Senior Hygiene Seminar

Systematic and comprehensive review of basic science courses with emphasis on their relationships to clinical practice; current concepts in multiple auxiliary delivery systems and practice management concepts will be included.

Cr. 1-2.

DHYG H347 - Dental Public Health

A study of public health principles as they relate to dentistry. The students will be introduced to those aspects of public health that will enable them to plan, administer, and evaluate a dental health program.

Cr. 3-4.

Hours

Class 2, Lab 2.

Total Credits: 61

Dental Laboratory Technology (A.S.)

Program: A.S. in Dental Laboratory Technology

Department of Dental Education

College of Health and Human Services

Neff Hall Room 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the degree are as follows:

Graduates of the Dental Laboratory Technology program will:

- Demonstrate the breadth of knowledge in the principals of restorative dental prosthesis and dental sciences.
- Demonstrate proficiency in the technical competency skills necessary to perform at or beyond an entry-level position in a dental laboratory.
- Comprehend and apply dental terminology, and technical advancements in the dental laboratory technology profession.
- Demonstrate ethical work habits and behavior patterns that are required for the success and advancement in the dental profession.
- Demonstrate the need for continued learning and professional development locally, nationally and internationally in the field of dental laboratory technology.
- Demonstrate the written, oral and multimedia skills necessary to communicate effectively in multicultural/diverse settings.
- Demonstrate skills in critical thinking, interpretation, reasoning, questioning, and decision making in the dental profession.
- Demonstrate proficiency in interpreting and evaluating current dental prosthetic research and apply that knowledge to demonstrate dental laboratory skills necessary for life-long learning.
- Promote the dental laboratory technology profession through service learning activities, affiliations with professional organizations, and partnerships with dental companies and the community.

The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association. A Dental Laboratory Technology degree prepares you for a career as a dental

health professional in the construction of restorative dental prostheses prescribed by a dentist. All courses are offered during daytime hours. Upon completion of the program, you are eligible to take a written Comprehensive Examination and one written Specialty Examination. After successful completion of these two written examinations, an additional practical examination may enable you to become a certified dental technician. These examinations are offered by the National Board for Certification.

Admission

Admission to IPFW does not confer admission to the program. You must apply separately to both IPFW and the dental laboratory technology program. You must contact the director of dental laboratory technology for specific information about the program. You may begin the program only in the fall.

Program Requirements

To earn an A.S. in dental laboratory technology, you must fulfill the requirements of IPFW (see Part 8) and the Department of Dental Education, and satisfactorily complete the following courses:

IPFW General Education Requirements (12 credits)

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Dental Laboratory Technology Program Requirements

DLTP D111 - History, Ethics, Organization

History and background of dental laboratory technology, including dental practice acts, work authorization, dental ethics as applicable to dental auxiliaries.

Cr. 1.

DLTP D112 - Dental Anatomy

A study of individual tooth morphology; its relationship, alignment, and function in the oral cavity.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D113 - Basic Physics, Chemistry, and Dental Materials

The chemical and physical properties and requirements of restorative and prosthetic materials will be taught. Manipulative procedures are performed in the laboratory.

Cr. 5.

Hours

Class 2, Lab 6.

DLTP D114 - Occlusion

The interdigitation of teeth and their relationship to function, phonetics, and esthetics will be introduced. Waxing techniques to obtain these desired results will be utilized in the laboratory.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D125 - Crown and Bridge Prosthodontics I

An introduction to the types and uses of fixed restorations and techniques of fabrication. The theories and concepts for the use of different types of restorations will be included.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D126 - Orthodontics/ Pedodontics Appliances I

An introduction to the basic laboratory skills pertinent to fabrication of orthodontic and pedodontic appliances. Special emphasis placed on various wire bending techniques and designs. Students will also be introduced to the pouring and trimming of diagnostic casts.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D127 - Complete Denture Prosthodontics I

An introduction to the setup and arrangement of artificial teeth. Waxing, investing, processing, and finishing procedures will also be taught. The basics of denture repair will be introduced.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D128 - Partial Denture Prosthodontics I

An introduction to the theories and procedures of partial framework fabrication. The procedures of design, duplicating, waxing, investing, casting, and finishing will be introduced.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D129 - Dental Ceramics I

An introduction to the types and uses of fixed restorations and techniques in the fabrication of porcelain to metal restorations.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D215 - Crown and Bridge Prosthodontics II

Fixed procedures are continued with emphasis on multiple unit castings. Theory and techniques to be included are pontic design, acrylic veneer design, and soldering.

Preparation for Course

P: DLTP D125.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D216 - Orthodontics/ Pedodontics Appliances II

The skills introduced in the basic course will be amplified. More intricate wire bending exercises will be used. Acrylic placement, basic soldering, and welding techniques will be introduced.

Preparation for Course

P: DLTP D126.

Cr. 3.

Hours

Class 1, Lab4.

DLTP D217 - Complete Denture Prosthodontics II

Setup and arrangement procedures using various degrees of posterior teeth will be covered. The characterization of dentures using tooth arrangement, waxing, and finishing procedures will be introduced. Students will also be taught refitting techniques such as relines and rebases.

Preparation for Course

P: DLTP D127.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D218 - Partial Denture Prosthodontics II

The fabrication of various designed frameworks will be utilized. The arrangement and processing of artificial teeth and the repairing of frameworks will be introduced.

Preparation for Course

P: DLTP D128.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D219 - Dental Ceramics II

Porcelain to metal procedures are continued with emphasis on multiple unit restorations. An introduction to soldering techniques and porcelain jacket crowns will be included.

Preparation for Course

P: DLTP D129.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D222 - Practical Laboratory Experience

A practicum in dental laboratory procedures in one of the five specialty areas. This practicum may be given on campus or at an extramural site.

Cr. 4-6.

Hours

Class 1, Lab 10.

Credits from among two of the following: Credits: 8

DLTP D225 - Specialty in Crown and Bridge Prosthodontics

This course will offer the student an opportunity to specialize in crown and bridge fabrication. Speed and accuracy in the procedures of fabrication will be stressed.

Preparation for Course

P: DLTP D215.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D226 - Specialty in Orthodontics/ Pedodontics

This course will offer the student an opportunity to specialize in orthodontic and pedodontic appliance fabrication. Speed and accuracy in the procedures of appliance fabrication will be stressed.

Preparation for Course

P: DLTP D216.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D227 - Specialty in Complete Denture Prosthodontics

This course will give students the opportunity to specialize in complete denture fabrication. Emphasis will be placed on speed and accuracy in all phases of denture fabrication.

Preparation for Course

P: DLTP D217.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D228 - Specialty in Partial Denture Prosthodontics

This course will give students the opportunity to specialize in framework fabrication. Speed and accuracy in the procedures of framework fabrication will be stressed.

Preparation for Course

P: DLTP D218.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D229 - Specialty in Dental Ceramics

This course will give students the opportunity to specialize in dental ceramic restoration fabrication. Emphasis will be placed on speed and accuracy in all phases of restoration fabrication.

Preparation for Course

P: DLTP D219.

Cr. 4.

Hours

Class 2, Lab 4.

Total Credits: 72

Early Childhood Education (A.S.)

Program: A.S.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The A.S. in early childhood education program provides preparation for workers in nursery schools, Headstart programs, and preschool programs. It does not qualify you for teacher licensure. However, most of the courses can be applied toward a bachelor's degree in elementary education which does lead to teacher licensure.

To earn the A.S. in early childhood education, you must fulfill the requirements of IPFW (see Part 8) and the School of Education.

IPFW General Education Requirements Credits: 30

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

(corequisite with EDUC E317) Credits: 3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

(corequisite with EDUC W200) Credits: 0.

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 1

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

One of the following: Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits:3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

Professional Courses Credits: 34

(a grade of B or better is required in all Professional Courses)

EDUC E317 - Practicum in Early Childhood Education

Methods and materials used in the education of children from 3 to 6 years of age. Observation and participation. Final course in endorsement/ degree.

Cr. 4.

(corequisite with EDUC H340)

EDUC E330 - Infant Learning Environments

Students will broaden their knowledge base of appropriate instructional strategies to enhance infant-toddler development, caregiving skills, and knowledge of appropriate learning environments, and will apply strategies and knowledge in providing care and educational experiences.

Cr. 3.

EDUC E333 - Inquiry in Mathematics and Science

Focuses on planning and managing appropriate science and math experiences with children who are 3 to 8 years of age. Opportunity for exploring, developing, experimenting, and evaluating instructional materials and their inherent possibilities for children's learning. Planning appropriate inquiry-oriented experiences will be stressed.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E335 - Introduction to Early Childhood Education

This course has a dual focus. First, it is an overview of the field including an historic perspective, program models, goal of early childhood education, and professional organizations. The second focus emphasizes learning observation skills, understanding the characteristics of young children, teacher-child interaction, and classroom management skills.

Cr. 3.

EDUC E336 - Play as Development

Includes theories and development of play and how it can be guided. Shows how children use play to develop individually; understand the physical, social, and cognitive environment; and develop physical and motor skill and creative ability. Includes a section on the selection and construction of play materials.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E337 - Classroom Learning Environments

This course focuses on the curriculum aspects of early childhood programs designed to meet ethnic and cultural differences and planning, utilizing, and evaluating learning environments. Selection of materials and activities and the acquisition of skills for using these to stimulate children's development are major focuses.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E338 - The Early Childhood Educator

Includes the role of the teacher as a professional educator, including professional responsibilities, school and community relations, and involvement in professional organizations. A major emphasis is on parent involvement and parent education.

Cr. 3.

EDUC E346 - Discipline/Parenting for Young Children

A study of discipline of children in early childhood settings for interaction in teaching and learning environments with an emphasis on working with parents and teachers.

Cr. 3.

EDUC E347 - Language Arts for Early Childhood

This course describes the development of language and literacy in the early years. Curriculum and instructional strategies in varied early childhood settings are included.

Cr. 3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

(corequisite with EDUC P249, EDUC E330, EDUC E337) Credits: 0.

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Total Credits: 64

Electrical Engineering Technology (A.S.)

Program: A.S.

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the degree are:

Graduates will have:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.
- A commitment to quality, timeliness, and continuous improvement.

The two-year A.S. EET program is a combination of courses in electricity, electronics, computers, mathematics, science, and general academic areas. The program helps students prepare for employment as electrical/electronic or computer technicians, and provides knowledge in fields such as computer electronics, local area networking, industrial electronics, communication electronics, military electronics, automation, electronics servicing, and electrical power.

The CEIT department also offers the Bachelor of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the A.S., you must fulfill the requirements of IPFW (see Part 8) and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 4

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses Credits: 40

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

ECET 146 - Digital Circuits II

Basic digital system techniques with emphasis on programmable logic and ASIC theory. Computer-aided design is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

P: ECET 111. C: ECET 114 or CS 114.

Cr. 3.

Hours

Class 2, Lab. 2.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 207 - AC Electronics Circuit Analysis

AC circuits including the j operator, phasors, reactance, and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single-phase and three-phase circuits. Computer-aided analysis of circuits is used.

Preparation for Course

P: ECET157 and MA 154.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 231 - Electrical Power and Controls

This course introduces magnetic materials and properties followed by analysis of transformers and power conditioning equipment, induction motors, and single-phase and three-phase power systems. Motor control devices, programmable logic controllers, PLC input and output devices, and power systems communications and monitoring are introduced.

Preparation for Course

P: ECET 152 or 207 and MA 227.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 296 - Electronic System Fabrication

This course introduces project planning and basic concepts in electronic design automation (EDA). The student develops the project from an engineering rough sketch to a finished and test printed circuit board by utilization of EDA. New construction and testing techniques are introduced. The final product is presented in an oral and written report.

Preparation for Course

P: ECET 204.

Cr. 2-3.

Hours

Class 1, Lab. 2-3.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

or

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Required non-ECET technical course Credits: 3

CPET 190 - Problem Solving with MATLAB

A study of the principles and practice of problem solving using MATLAB. Topics include MATLAB basics, functions and variables, file input and output, user-defined functions and program design, complex data manipulation, graphical user interface, and technical problem-solving applications, etc. The students shall gain hands-on experience through several programming assignments and practice strategies for collaborative problem solving such as creating specifications, brainstorming, sketching an idea, solution evaluation, and solutions testing.

Preparation for Course

P: MA 153 and ECET 114 or CS 114.

Cr. 1-4.

Required Math Courses Credits: 10

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

For A.S. can substitute CHM 111 or STAT 301 for MA 228

Total Credits: 69

English Concentration (A.A.)

Program: Concentration A.A.

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- Students demonstrate the acquisition of a basic knowledge of language, writing, and British and American literature necessary for pursuit of a baccalaureate degree in English.
- Students demonstrate the ability to apply basic critical thinking skills to the analysis of a variety of texts.
- Students display the ability to communicate a basic understanding of English literature with rhetorical precision, clarity, and critical awareness.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory
Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in English (see Part 5), you should take the second year foreign-language courses as electives for the A.A.

- ENG L202 - Literary Interpretation

- Credits in American literature Credits: 3
- Credits in British literature before 1700 Credits: 3
- Credits in British literature after 1700 Credits: 3
- Credits in language study Credits: 3
- Credits in ENG W203 or a 300-400-level English writing course Credits: 3

French Concentration (A.A.)

Program: Concentration A.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language;
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Concentration Requirements

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in French, see Part 5 for B.A. requirements.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

One of following Credits: 3

FREN F326 - French in the Business World

Study of the language of business activities in France, with an introduction to the structure and functioning of various aspects of French economic life. Useful for students preparing for the proficiency examinations of the Chambre de Commerce de Paris.

Preparation for Course

P: FREN F204 (or equivalent).

Cr. 3.

FREN F330 - Introduction to Translating French and English

A comparative study of the style and grammar of both languages with focus on the difficulties involved in translating. Introduction to the various tools of the art of translation.

Preparation for Course

P: FREN F317.

Cr. 3.

General Studies (A.A.G.S.)

Program: A.A.G.S.

Division of Continuing Studies

Kettler Hall 144 ~ 260-481-6828 ~ www.ipfw.edu/dcs/gsdg

The student learning outcomes for the degree are as follows:

- Speak and write precisely, clearly and persuasively.
- Understand the nature and diversity of individuals, organizations, cultures, and societies.
- Apply their knowledge in written, oral communication, or technical competencies.
- Apply the knowledge gained across interdisciplinary boundaries.

General Studies offers a wide variety of personalized degree options to the traditional and nontraditional student. Students may individually tailor their program to combine a substantial core of courses basic to a traditional university education and study in career-related areas. Within the flexible framework of degree requirements, students may design an undergraduate program that can more readily meet their career and personal-development goals than can a traditional major. Students will be encouraged and assisted in developing a unique academic program complementing their individual interests, abilities, and intellectual and practical concerns.

In addition to taking advantage of the wide variety of daytime, evening, and weekend classes at IPFW, students may choose to earn credit toward their degree through correspondence study. Students may also earn credit by examination, and in some cases earn credit for significant, documentable self-acquired competencies when the learning outcomes have been comparable to those of university-level work. Consideration is given to all previously earned college credit from other accredited institutions. The Associate of Arts in General Studies and Bachelor of General Studies programs may also be tailored to the needs of those unable to study on campus during regularly scheduled periods. Both degrees may be completed online.

Both programs include courses in broad categories called required areas of learning (listed below) and elective credit that students may earn in any IPFW program. The required areas of learning provide broad exposure to the humanities, social sciences, and sciences, while the electives permit students to explore areas of interest, receive credit for prior university-level experiential learning, and tailor the degree to their individual needs. In each plan of study, students must demonstrate competency in each of the following areas: written communication (two courses), oral communication, mathematics, computer literacy, and a diversity course.

After students are admitted to a general studies degree program, students will develop a plan of study to meet their objectives. An advisor will provide assistance in this effort. For further information, refer to the current Indiana University School of Continuing Studies *General Studies Degree Bulletin*.

To earn an A.A.G.S., students must complete the following requirements:

IPFW General Education Requirements

Area I- Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Required Areas of Learning

General studies is a university-wide degree program, certified through Indiana University's School of Continuing Studies. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities Credits: 6

(depending upon course selection for general education)

Afro-American Studies	Foreign Language
Classical Studies	History
Communication	Journalism
Comparative Literature	Music
English (except R150 and W130)	Philosophy
Film	Religion
Fine Arts	Theatre
Folklore	Visual Communication and Design

Science and Mathematics Credits: 9

(depending upon course selection for general education)

- ANTH B200 and E445 (only)
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K214, K215, and K216)
- ECON E270 (only)
- Entomology
- *ETCS 106
- Forestry and Natural Resources
- GEOG G107, G109, G315 (only)
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- PSY 120, 201, 310, 314, 329, and 416 (only)
- SOC S351 (only)

- SPEA K300 (only)
- Statistics

*required course

Social and Behavior Sciences Credits: 12

(depending upon course selection for general education)

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA J101 (only)
- WOST W210 (only)

12 credits in each required area of learning, including courses from at least two departments in each area

General Elective Courses Credits: 24

In consultation with an advisor, you are urged to concentrate electives in related areas.

Note

Students must complete at least 10 of the above credits after admission to the program. No more than 15 credits can be in any one subject. No more than 15 credits toward the AAGS may be awarded for successful completion of external exams such as CLEP. At least 15 credits must be taken within the IU system or as a Purdue student at IPFW.

Total Credits: 60

German Concentration (A.A.)

Program: Concentration A.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language;
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I: (9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning; ANTH L200 or LING L103 is recommended as a selection from IPFW General Education Area III. If you plan to continue for a bachelor's degree with a major in German, see Part 5 for B.A. requirements.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

One of following Credits: 3

GER G315 - Business German

Improvement of speaking, writing, listening, and reading skills. Concentration on the language of the German business world. Discussion, grammar, exercises, and letter writing. Conducted in German.

Preparation for Course

P: GER G204 (or equivalent).

Cr. 3.

GER G319 - German Language Skills II

Intensive work in conversation and composition based on readings in areas of current or topical interest with emphasis on contemporary Germany.

Preparation for Course

P: GER G204.

Cr. 3.

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

History Concentration (A.A.)

Program: Concentration A.A.

Department of History

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

The student learning outcomes for the degree are as follows:

- Have a basic introductory knowledge of the history of the United States, Europe, and other world areas;
- Have a basic understanding of history as a method of intellectual investigation;
- Have an appreciation for the relationship of the past to the culture and society of today; and
- Have a foundation for making a decision to continue toward the B.A. in history.

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in history, see Part 5 for B.A. requirements.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I: (9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory
Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21

- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

- Credits in upper-level American history Cr. 3.
- Credits in upper-level European history Cr. 3.
- Credits in upper-level Other World history Cr. 3.

Industrial Engineering Technology (A.S.)

Program: A.S

Department of Manufacturing & Construction Engineering Technology and Interior Design

Technology College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- an appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
 - Technical expertise in quality, metrology, advanced SPC, SQC, TQM, ISO standards, and design of experiments.
 - Technical expertise in ergonomics, work methods design, optimization, engineering economy, and cost estimating.
 - Technical expertise in facilities layout, production planning and control, queuing theory, modeling, and simulation.
 - Technical expertise in CAD, engineering graphics, GC&T, gage capability studies, and measurement uncertainty.
 - Technical expertise in materials, manufacturing processes, design for manufacturing and assembly, and CNC machining.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively.
 - An ability to communicate effectively.
 - An ability to communicate effectively through oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues related to the profession.
 - A knowledge of and respect for diversity.
 - A knowledge of contemporary societal issues related to the profession.
 - A knowledge of contemporary global issues related to the profession.
- A commitment to quality, timeliness, and continuous improvement.
 - A commitment to Quality.
 - A commitment to timeliness.
 - A commitment to continuous improvement.

This program prepares graduates with knowledge, technical, analytical, and managerial skills necessary to develop, implement, and improve integrated systems in manufacturing and service industries that include people, materials, equipment, information, and energy. Graduates will be prepared for careers in higher levels of system design, integration, and management. To earn the B.S. with a major in industrial engineering technology, you must fulfill the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and of the A.A., and complete the following credits, earning a grade of C or better in those courses that serve as prerequisites:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

Grade of C or better required for the following courses.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area II—Natural and Physical Sciences

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Grade of C or better required

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Grade of C or better required

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Core and Concentration (Major) Courses

ETCS 101 - Introduction to Engineering, Technology, and Computer Science

Introduction to the professions of engineering, engineering technology, and computer science. Focus is on academic, career, and professional development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

IET 224 - Production Planning and Control

A survey of production inventory control procedures including material requirements planning, just-in-time methods, and project management.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3,

IET 257 - Ergonomics

The course covers application of ergonomic principles to the design of interface between human and machine systems, and consideration of human abilities and limitations in relation to design of equipment and work environment.

Preparation for Course

P: MET 106.

Cr. 3.

Hours

Class 3,

IET 267 - Work Methods Design

An introduction to workplace design and work measurement, including time and motion study, ergonomics, and process standardization.

Preparation for Course

P: 105.

Cr. 3.

Hours

Class 3,

Grade of C or better required

IET 310 - Plant Layout and Material Handling

Analysis of material flow in a manufacturing facility.

Preparation for Course

P: MET 104, MA 159.

Cr. 3.

Hours

Class 3,

Grade of C or better required

MET 104 - Technical Graphics Communications

An introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

Preparation for Course

C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

MET 106 - Analytical and Computational Tools in MET

Introduction to analytical and computational problem-solving techniques. The electronic calculator, the factor-label method of unit conversions, engineering graphs, and the computer are used to solve problems. Computer emphasis is on spreadsheet analysis, graphics, and generation of technical reports through the integrated use of software packages.

Cr. 2.

Hours

Class 1, Lab. 2,

Grade of C or better required

MET 180 - Materials and Processes

Application and characteristics, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

Preparation for Course

P: 106; C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

MET 223 - Introduction to Computer- Aided Modeling and Design

An introduction to computer-aided modeling and design (CAMD) with hands-on experience in the operation of an interactive computer graphics system. Generation of 3-D computer models and preparation of working drawings including geometric dimensioning and tolerancing.

Preparation for Course

P: 104, 106.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

MET 335 - Basic Machining

A comprehensive survey of machine tools as they are used in converting workpieces into finished products with consideration of cost, quality, quantity, and interchangeability and safety requirements. Actual operation analysis of many machine tools set-ups will be provided for comparison studies.

Preparation for Course

P: 104, 180, PHYS 218.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

Additional Required Technical Courses

Grade of C or better required for the following courses.

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required Support Courses

Grade of C or better required for the following course.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 64

Information Systems (A.S.)

Program: A.S.

Department of Computer and Electrical Engineering Technology and Information Systems

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to analyze a problem and identify and define the computing appropriate to the discipline.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.

- An understanding of processes that support the delivery and management of information systems within a specific application environment.

This program is focused on fundamental computing courses. All requirements may be applied to the B.S. program in information systems. Graduates of the A.S. program typically continue in the B.S. program, although they are qualified for employment opportunities in the computer field.

To earn the A.S. with a major in information systems, you must fulfill the requirements of IPFW (see Part 8) and complete the following courses. Only courses in your major field in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades will be accepted in other courses.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 6

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(or equivalent)

Area III—The Individual, Culture, and Society Credits: 3

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Major Requirements Credits: 23

- CS elective (200+ level) approved by advisor Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

IST 280 - Survey of Information Technology

An introduction to information technology development from a perspective using business fundamentals that relate to information systems and the analysis and design of those systems. Topics include competitive, strategic, and technological advantages; collaborative partnerships within e-business; decision making; and databases. Supply chain management, customer relationship management, enterprise resource planning, and other applications will be surveyed.

Preparation for Course

P: IST 140 or CS 114 or IST 155 or CS 155, BUS W100 or IET 105.

Cr. 3.

One of the following Credits: 3

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

IST 140 - Introduction to Visual Basic Applications

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and data bound controls; data handling; grids; validations and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

Supporting Courses Credits: 18

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

One of the following Credits: 3

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

One of the following Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Approved Laboratory Course Credits: 4

In Biology, Chemistry, Earth and Space Sciences, Or Physics

Elective Credits: 11**Approved Laboratory Course Credits: 4**

In Biology, Chemistry, Earth and Space Sciences, Physics, or Astrology with Geology G100 lab.

Approved Elective Credits: 7**Total Credits: 64****Interior Design (A.S.)****Program: A.S.****Department of Manufacturing & Construction Engineering Technology and Interior Design****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 229 ~260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students are able to advance their learning.
 - Be able to interact with multiple disciplines.
 - Have opportunities for design work experience.
- Students have the attitudes, traits, and values of professional responsibility, accountability, and effectiveness.
 - Have critical, analytical, and strategic thinking abilities.
 - Be able to have creative thinking (exhibit a variety of ideas, approaches, concepts with originality and elaboration).
 - Have the ability to think visually and volumetrically.
 - Have active listening skills leading to effective interpretation of requirement.

- Students have a foundation in the fundamentals of art and design; theories of design, green design, and human behavior; and discipline-related history.
 - Understanding design elements (for example, space, line, mass, shape, texture) and principles (for example, scale, proportion, balance, rhythm, emphasis, harmony, variety).
 - Understanding color principles, theories, and systems (for example, additive and subtractive color; color-mixing; hue, value, and intensity; the relationship of light and color).
 - Understanding theories of design and design composition.
 - Understanding principles of lighting design (for example, color, quality, sources, use).
 - Understanding of the history of architecture and finishes.
- Students understand and apply the knowledge, skills, process, and theories of interior design.
 - Apply 2-dimensional design elements and principles in interior design projects.
 - Select and apply color in interior design projects.
 - Have competent schematic design, concept development, and problem solving skills.
- Students communicate effectively.
 - Be competent in drafting with computer-aided techniques.
 - Be competent in digital 3D modeling.
 - Be competent in illustrative sketching.
 - Be competent in presentation of color, materials, and furnishings (for example, sample boards, collages, mock-ups, digital representations).
 - Be able to express ideas clearly in oral presentations and critiques.
 - Be able to render by any medium, manual or computer-generated, that successfully communicates the design intent.
 - Be able to communicate 3-dimensional space and form, such as in perspectives and models (computer-generated or manual).

The associate degree in interior design prepares you for employment as an interior design assistant, residential designer, kitchen design consultant, lighting and color consultant, drafts person, CAD operator, or product representative. You are prepared for these responsibilities through a blend of technical and practical design courses. The program is enhanced by overseas travel and study opportunities. Graduates will be prepared for immediate employment and continuation in the B.S. program.

To earn the A.S. with a major in interior design, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); earn a grade of C or better in ENG W131 and each required INTR course; and complete the requirements listed below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 3

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

Area IV—Humanistic Thought Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

Core and Concentration (Major) Courses Credits: 44

ARET 123 - Construction Graphic Communication

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

ARET 281 - Environmental Equipment for Buildings I

A survey of basic environmental control parameters of heating, ventilating, air conditioning, plumbing, lighting, electricity, and their equipment (size and shapes) and the physiological effects on mankind. Emphasis placed on definitions, types of systems, and physical characteristics of equipment.

Preparation for Course

P: ARET 124, MA 153.

Cr. 3.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

INTR 111 - Introduction to Interior Design

Introduction to requirements of design with emphasis on people, space, scale, light, color, materials, furniture, accessories, and budget in the residential environment.

Preparation for Course

P: INTR 121.

Cr. 3.

INTR 112 - Residential Interior Design II

Advanced techniques of furniture arrangements and design principles. Coordination of interior design principles throughout a complete residential environment (i.e., house, apartment, condominium). Estimating of drapery, floor, and wall coverings as it applies to various projects.

Preparation for Course

P: 111 with a C or better required, INTR 123, and ARET 123.

Cr. 3.

INTR 121 - Freehand Sketching

Drawing in the "freehand" (nonmechanical) method will be presented in pencil, ink, and markers. The course is aimed at the beginning design student. It will utilize objects of interior environment as a means of understanding various drawing principles and familiarize the student with basic rendering techniques.

Cr. 3.

INTR 123 - Perspective Drawing

Perspective drawing of building interiors and rooms in one- or two-point projection incorporating light, shadow, and furnishings are emphasized. Application of texture and color are presented in multimedia.

Preparation for Course

P: 121.

Cr. 3.

INTR 131 - Decorative Materials and Accessories I

History of textiles, fiber content, weaves, and designs. Functional uses of fabrics for interiors (i.e., windows, upholstery). Emphasizes decorative treatment of textile patterns and uses of materials through design problems. The assembling of notebooks is required.

Cr. 3.

INTR 201 - CAD for Interior Design

The study and application of computer-aided design and drafting (CADD) as a means of visualizing complex spatial designs of the built environment, reducing the amount of time needed to produce complicated hand-constructed drawings.

Cr. 3.

INTR 206 - Portfolio and Professional Presentation

Students will study portfolio design, materials selection, and publication methods. Graphic themes, reprographic techniques, and binding or alternative presentation will be studied. Development of a personal portfolio is required. Course may include development of a public exhibition of student work.

Preparation for Course

P: 112 and 201; C: 241.

Cr. 1

INTR 241 - Lighting and Color Design

Study of how natural and artificial lighting and color affect the human environment. Principles of physical and psychological aspects of lighting and color (i.e., hue, value, and intensity) are applied to design theory.

Preparation for Course

P: 112, 201 and ARET 281; C: PHY 125.

Cr. 3.

VCD F102 - Color Design

This is an introductory course presenting color and design, color theory, cultural uses and meaning, and the history of color in art and design. Additive and subtractive color palettes and the observation of hues as seen in nature will be explored through lectures and studio projects.

Cr. 3.

Total Credits: 65

Labor Studies (A.S.)

Division of Labor Studies

Program Offered: A.S.L.S.

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the Associate of Science in Labor Studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses:

Program Requirements

Credits from the Labor Studies Core Credits: 15

Credits from the following: 15

LSTU L100 - Survey of Unions and Collective Bargaining

A survey of labor unions in the United States, focusing on their organization and their representational, economic, and political activities. Includes coverage of historical development, labor law basics, and contemporary issues.

Cr. 3.

LSTU L101 - American Labor History

A survey of the origin and development of unions and the labor movement from colonial times to the present. The struggle of working people to achieve a measure of dignity and security will be examined from social, economic, and political perspectives.

Cr. 3.

LSTU L110 - Introduction to Labor Studies: Labor and Society

An introduction to the changing role of labor in society. The course will emphasize a comparative approach to issues confronting labor organizations.

Cr. 3.

LSTU L190 - The Labor Studies Degree

Required for all DLS majors. This course will provide an introduction to the labor studies degree and to the knowledge and skills needed by students to progress toward a degree in a reasonable time frame. Students will learn how to build a plan of study that takes advantage of both credit for prior learning and new learning opportunities.

Cr. 1.

LSTU L200 - Survey of Employment Law

Statutes and common law actions protecting income, working conditions, and rights of workers. Topics include workers' compensation, unemployment compensation, fair labor standards, Social Security, retirement income protection, privacy, and other rights.

Cr. 3.

LSTU L201 - Labor Law

A survey of the law governing labor-management relations. Topics include the legal framework of collective bargaining, problems in the administration and enforcement of agreements, protection of individual employee rights.

Cr. 3.

LSTU L203 - Labor and the Political System

Federal, state, and local governmental effects on workers, unions, and labor-management relations; political goals; influences on union choices of strategies and modes of political participation, past and present; relationships with community and other groups.

Cr. 3.

LSTU L205 - Contemporary Labor Problems

An examination of some of the major problems confronting society, workers, and the labor movement. Topics may include automation, unemployment, international trade and conglomerates, environmental problems, minority and women's rights, community relations, changing government policies.

Cr. 3.

LSTU L210 - Workplace Discrimination and Fair Employment

Examines policies and practices that contribute to workplace discrimination and those designed to eliminate discrimination. Explores effects of job discrimination and occupational segregation. Analyzes Title VII, ADA, and related topics in relation to broader strategies for addressing discrimination.

Cr. 3.

LSTU L220 - Grievance Representation

Union representation in the workplace. The use of grievance procedures to address problems and administer the collective bargaining agreement. Identification, research, presentation, and writing of grievance cases. Analysis of relevant labor law and the logic applied by arbitrators to grievance decisions.

Cr. 3.

LSTU L230 - Labor and the Economy

Analysis of the political economy of labor and the role of organized labor within it. Emphasis on the effects on workers, unions, and collective bargaining of unemployment investment policy, and changes in technology and corporate structure. Patterns of union political and bargaining response.

Cr. 3.

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

LSTU L250 - Collective Bargaining

The development and organization of collective bargaining in the United States. Union preparation for negotiations, bargaining patterns and practices, strategy and tactics; economic and legal considerations.

Cr. 3.

LSTU L251 - Collective Bargaining Laboratory

Designed to provide collective bargaining simulations and other participatory experiences in conjunction with L250.

Preparation for Course

P: or C: L250.

Cr. 1-3.

LSTU L255 - Unions in State and Local Government

Union organization and representation of state and municipal government employees, including patterns in union structure, collective bargaining, grievance representation, and applicable law.

Cr. 3.

LSTU L260 - Leadership and Representation

Organizational leadership issues for the union, community, and other advocate organizations. Analyzes leadership styles, membership recruitment, and leadership development. Examines the role of leaders in internal governance and external affairs including committee building, delegation, negotiations, and coalition building.

Cr. 3.

LSTU L270 - Union Government and Organization

An analysis of the growth, composition, structure, behavior, and governmental processes of U.S. labor organizations, from the local to national federation level. Consideration is given to the influence on unions of industrial and political environments, to organizational behavior in different types of unions, and to problems in union democracy.

Cr. 3.

LSTU L280 - Union Organizing

Explores various approaches and problems in private and public sector organizing. Traditional approaches are evaluated in light of structural changes in labor markets and workforce demographics. Topics range from targeting and assessments to committee building and leadership development.

Cr. 3.

Required Areas of Learning for Labor Studies

Arts and Humanities

- Afro-American Studies
- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Theatre
- Visual Arts

Sciences and Mathematics

- Anthropology (B200 and E445 only)
- Astronomy
- Biology
- Chemistry (except 100)
- Computer Science (includes BUS K200, K211, K212, K213, K214, K215, K216)
- Economics (E270 only)

- Entomology
- Forestry and Natural Resources
- Geography (G107 and G304 only)
- Geology
- Horticulture
- Mathematics (except 101, 102, 103, 109, 111, and 113)
- Physics
- Psychology (120, 201, 314, 333, 329, and 416 only)
- Sociology (S351 only)
- SPEA (K300 only)
- Statistics

Social and Behavior Sciences

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA (J101 only)
- WOST (W210 only)

Additional credits in labor-studies courses Credits: 12

Arts and Humanities Area of Learning (12 credits)

- Credits in a second writing course Credits: 3
- Credits from at least two different subjects Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Social and Behavioral Sciences Area of Learning Credits: 9

Credits, including one economics course (ECON E201 is recommended); courses in this area must be selected from at least two different subjects

Science and Mathematics Area of Learning Credits: 6

Credits, including one course in computer science (recommended). Science and mathematics courses must be selected from at least two different subjects

Electives Credits: 6

Note

You must earn a minimum of 10 credits after admission to labor studies and may apply toward the degree no more than 15 credits in a single subject other than labor studies. You must complete at least 12 credits while enrolled as an IU student.

Total Credits: 60

Mathematics Concentration (A.A.)

**Program Offered: Concentration A.A.
Department of Mathematical Sciences
College of Arts and Sciences**

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students who complete the Associate of Arts Degree in Mathematics should be able to reason mathematically and should be good problem solvers.
- Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g. physics, engineering and business.
- Students who complete the degree should be prepared to complete a Bachelor of Science Degree in Mathematics in two years with a full-time course load.

The requirement of a Quantitative Reasoning course in IPFW General Education Area I is satisfied by the courses below. If you plan to continue for a bachelor's degree with a major in mathematics or mathematics teaching, see Part 5 for B.S. requirements.

Program Requirements

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

One of the following Credits: 3

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Mechanical Engineering Technology (A.S.)

Program: A.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
- An ability apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of mechanical systems, mechanical components or manufacturing processes. An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems in mechanical engineering and engineering technology. An ability to communicate effectively.
- A recognition of the need for, and an ability to engage in lifelong learning. An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity contemporary societal and global issues.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, problem-solving ability, and hands-on skills to enter careers in installation, manufacturing, testing, evaluation, computer-aided design, or maintenance of basic mechanical systems. Graduates will be prepared for both immediate employment and continuation in the B.S. program.

To earn the A.S. with a major in mechanical engineering technology, you must fulfill the requirements of IPFW (see Part 8) and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites.

- technical expertise in engineering materials, applied mechanics, and applied fluid sciences.
- technical expertise in manufacturing processes, mechanical design, and computer-aided engineering graphics with added technical depth in computer-aided engineering graphics.
- expertise in applied physics having emphasis in applied mechanics plus fundamentals of electricity in physics.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

All courses require a grade of C or better.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area II—Natural and Physical Sciences

All courses require a grade of C or better.

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society

All courses require a grade of C or better.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses

All courses require a grade of C or better.

ETCS 101 - Introduction to Engineering, Technology, and Computer Science

Introduction to the professions of engineering, engineering technology, and computer science. Focus is on academic, career, and professional development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 104 - Technical Graphics Communications

An introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

Preparation for Course

C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 106 - Analytical and Computational Tools in MET

Introduction to analytical and computational problem-solving techniques. The electronic calculator, the factor-label method of unit conversions, engineering graphs, and the computer are used to solve problems. Computer emphasis is on spreadsheet analysis, graphics, and generation of technical reports through the integrated use of software packages.

Cr. 2.

Hours

Class 1, Lab. 2,

MET 180 - Materials and Processes

Application and characteristics, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

Preparation for Course

P: 106; C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 216 - Machine Elements

The design and analysis of machine components with emphasis on safety factors based on various failure theories in consideration of fluctuating loads, stress concentration, and other factors affecting failure. A study of standard machine

elements such as brakes, clutches, belts, chains, gears, screws, springs, and bearings; their application, operational behavior, efficiency, economy, and standardization.

Preparation for Course

P: 202, 223, CS 114, STAT 301; C: 335.

Cr. 4.

Hours

Class 4,

MET 223 - Introduction to Computer- Aided Modeling and Design

An introduction to computer-aided modeling and design (CAMD) with hands-on experience in the operation of an interactive computer graphics system. Generation of 3-D computer models and preparation of working drawings including geometric dimensioning and tolerancing.

Preparation for Course

P: 104, 106.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 330 - Introduction to Fluid Power

A study of the development, transmission, and utilization of power through fluid power circuits and controls.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 335 - Basic Machining

A comprehensive survey of machine tools as they are used in converting workpieces into finished products with consideration of cost, quality, quantity, and interchangeability and safety requirements. Actual operation analysis of many machine tools set-ups will be provided for comparison studies.

Preparation for Course

P: 104, 180, PHYS 218.

Cr. 3.

Hours

Class 2, Lab. 3,

Additional Required Technical Courses

All courses require a grade of C or better.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required Support Courses

All courses require a grade of C or better.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 63

Organizational Leadership and Supervision (A.S.)

Program: A.S.

Division of Organizational Leadership and Supervision

College of Engineering, Technology, and Computer Science

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student-learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems, and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group, and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will show an awareness of the cultural context of organizations and demonstrate their ability to work with diverse others.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will demonstrate effective oral and written communication skills.
- Students will be able to manage their environment by planning for and using current technology, tools, and processes.

This program helps you prepare for leadership positions or for advancement in a wide variety of organizations. The A.S. with a major in organizational leadership and supervision is of particular benefit to individuals who already possess technical skills and work experience and to students who complete the program along with a bachelor's degree in a technical or behavioral-science area.

To earn the A.S. with a major in organizational leadership and supervision, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science, Division of Organizational Leadership and Supervision (see Part 4); earn a grade of C or better in ENG W131, ENG W233, and each OLS course; and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

OLS Core Classes

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS Electives Credits: 6

See the OLS advisor for a list of approved OLS electives.

Technical Support Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

Unrestricted Elective Courses Credits: 6

Total Credits: 63

Special Academic Regulations for Organizational Leadership and Supervision Degree Programs

Transfer students and students planning to change their major to organizational leadership and supervision must have a GPA of 2.00 or higher to be admitted into the program. A cumulative GPA of 2.0 or above is also required to remain in the division.

OLS, business, and technical courses taken more than 10 years ago will not count towards your degree requirements.

Students receiving credit for cooperative education experience can use these credits as unrestricted electives only.

If you have not registered for degree-applicable courses as an IPFW OLS major for four consecutive semesters (excluding summer), you must satisfy the degree requirements specified in the IPFW Bulletin that includes your year of re-entry.

Political Science Concentration (A.A.)

Program: Concentration A.A.
Department of Political Science
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- To have a basic knowledge of the discipline in political science.
- To have basic analytical skills as well as the writing skills necessary to communicate ideas.
- To be exposed to sufficient materials so that students can decide whether or not they want to pursue a BA degree in political science.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher

- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total Credits: 60-63 (with a graduation GPA of at least 2.0)

Concentration Requirements

In addition to the courses listed below, you must complete MA 153 or MA 168 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in political science (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Additional credits in political science Cr: 6

Additional credits in political science, 200 level or above Cr: 6

Psychology Concentration (A.A.)

Program: Concentration A.A.
Department of Psychology
College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate basic knowledge in introductory, child, social and abnormal psychology.
- Students will demonstrate the ability to make a decision as to whether they wish to obtain a BA degree in psychology.

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 as your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in psychology (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

General Education Requirements

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Program Requirements

- Additional credits in psychology, 200 level or above Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Two of the following Credits: 6

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Two of the following Credits: 6

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 and PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 and PSY 369

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Radiography (A.S.)**Program: A.S.R.****Student Success Center****College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/radiography/

The student learning outcomes for the degree are as follows:

- Demonstrate clinical procedural proficiency and radiation safety.
- Demonstrate age specific radiographic patient care.
- Evaluate the quality of radiographic images.
- Demonstrate logical film sequence for non-routine situations.
- Demonstrate effective interpersonal communication with patients and other healthcare staff.
- Demonstrate effective written communication in patient records.
- Demonstrate broad knowledge of the scientific principles that define radiographic practice.

The IPFW Radiography Program is offered in affiliation with the Fort Wayne School of Radiography (FWSR). The FWSR is cosponsored by Parkview Hospital and St. Joseph Hospital and is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182; Phone: (312) 704-5300; Fax: (312) 704-5304; www.jrcert.org.

The Radiography Program curriculum includes general education prerequisite courses provided by IPFW and professional education courses provided by the FWSR. Students are designated as preradiography majors prior to admission to the FWSR. University prerequisite courses may be completed by preradiography students under the advisement of the College of Health and Human Services at IPFW. The professional education curriculum is a structured, full-time, 24-month program beginning Summer Semester II each year. Professional education is a combination of classroom instruction and clinical experience. The clinical experience is conducted in the radiology departments of St. Joseph Hospital, Parkview Hospital, Parkview North Hospital, and Dupont Hospital in addition to Fort Wayne Orthopaedics and Fort Wayne Orthopaedics Dupont facilities.

Application to FWSR - Application materials are obtained from the FWSR by request:

Fort Wayne School of Radiography
700 Broadway
Fort Wayne, Indiana 46802
Phone: (260) 425-3990
Fax: (260) 425-3887
Email: duncanc@ipfw.edu

Admission Criteria - Admission to the FWSR from preradiography status is limited and competitive, based on a total composite score of the following:

- Preradiography curriculum GPA
- References
- FWSR preadmission testing
- Personal interview

Completion of preradiography course work alone does not ensure admission.

Application Requirements - Applicants seeking admission to the FWSR must meet the following requirements to sit for the preadmission test:

Complete at least 7 credit hours of the preradiography curriculum with a minimum 2.7 preradiography curriculum grade point average. Preradiography curriculum is:

- MA 153
- PSY 120
- ENG W131
- BIOL 203
- BIOL 204
- ETCS 106
- COM 114 or COM 212

Applicants may complete the equivalents of these courses at other colleges and universities. A student may make two graded attempts at a prerequisite course, with the most recent grade calculated in preradiography curriculum GPA. The student's two attempts will include any graded attempt, whether or not eliminated from the student's cumulative GPA by grade replacement.

For the purpose of selecting candidates to the radiography program, FWSR will allow an applicant to petition to the program's admissions committee for a fresh start. A fresh start allows removal of a defined portion of the applicant's early academic history from calculation of admission grade point average. Please contact the preradiography Academic Advisor or the FWSR for more information about the Fresh Start policy.

- Earn a grade of C- or better in all preradiography curriculum course work.

- Complete BIOL 203, BIOL 204, and MA 153 courses within 5 years of the desired start date of the FWSR professional program.
- Submit an application, application fee, official high school transcript, official college transcripts (one from each post-secondary institution attended) and references directly to the FWSR, postmarked by March 1 for desired admission in the immediately following Summer Semester II. Reference forms are included in the application materials.

Preradiography curriculum course work and grades from all post-secondary institutions attended will be reviewed and evaluated. Equivalents to preadmission testing requirements will be evaluated on an individual basis.

Preadmission Test - Applicants meeting the preceding criteria will be scheduled for preadmission testing.

Personal Interview - Individuals who meet the minimum preadmission testing score will be contacted to arrange a personal interview. A personal interview is required before a final selection is made.

Admittance to the FWSR - In order to be admitted to the FWSR, applicants must complete all preradiography curriculum course work by the end of spring semester with a grade of C- or better in each course and maintain a minimum 2.7 preradiography curriculum grade point average.

Acceptance into the Radiography Program is contingent on an applicant's ability to meet the following additional requirements:

- Demonstrate meeting the College of Health and Human Services Technical Standards.
- Complete a Background Check.
- Submit a Driving Record.
- Submit military discharge papers, if applicable.
- Pass a Drug Screening Test.
- Complete a Physical Examination and submit a Health Record with documentation of required immunizations.
- Submit proof of Professional Liability Insurance.
- Obtain an Indiana State Board of Health Radiology Permit.

* Upon acceptance into the Radiography Program, students will be provided with the forms and information necessary to complete the above listed additional requirements. Expenses incurred in meeting the above listed additional requirements are the responsibility of the applicant.

At IPFW you may complete the following courses: (23 credits)

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing.

Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following:

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Professional Education Program: (60 credits)

AHLT R100 - Orientation to Radiologic Technology

Introduction to the field of radiology and its history. Students learn proper ethical standards, become acquainted with the duties and responsibilities in personal care for the patient, and investigate radiation protection for the patient and personnel. Degree credit will not be given for both R100 and R104.

Preparation for Course

C: AHLT R101, R102, R181.

Cr. 2.

AHLT R101 - Radiographic Procedures I

Concepts in radiography with emphasis on the radiographic procedures used to demonstrate the skeletal system.

Preparation for Course

C: AHLT R100, R102, R104, R181.

Cr. 3-4.

IPFW course is 4 credit hours.

AHLT R102 - Principles of Radiography I

Basic concepts of radiation, its production, and its interactions with matter. Includes the production of the radiographic image and film processing.

Preparation for Course

C: AHLT R101, R181, Math 153.

Cr. 3.

AHLT R181 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

C: AHLT R100.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R182 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R101, R181.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

AHLT R200 - Pathology

A survey of the changes that occur in the diseased state to include general concepts of disease, causes of disease, clinical symptoms and treatment, and diseases that affect specific body systems.

Preparation for Course

P: anatomy/physiology.

Cr. 2-3.

IPFW course is 3 credit hours.

AHLT R201 - Radiographic Procedures II

Concepts in radiography with emphasis on radiographic procedures used to demonstrate the skull and those requiring the use of contrast media.

Preparation for Course

C: AHLT R101, R182, R202.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-3.

IPFW course is 4 credit hours.

AHLT R202 - Principles of Radiography II

Continuation of R102 with emphasis on the properties that affect the quality of radiographic image.

Preparation for Course

C: AHLT R102, R181, R201.

Cr. 3.

AHLT R205 - Radiographic Procedures III

Concepts in radiography with emphasis on special radiographic procedures and related imaging modalities.

Preparation for Course

C: AHLT R201, R222.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-3.

IPFW course is 4 credit hours.

AHLT R222 - Principles of Radiography III

Continuation of R202 with emphasis on the application of radiography principles of imaging equipment.

Preparation for Course

P: AHLT R202.

Cr. 3.

AHLT R250 - Physics Applied to Radiology

Fundamentals of radiation physics, X-ray generation, and equipment quality control.

Preparation for Course

P: MA 153.

Cr. 2-4.

IPFW course is 2 credit hours.

AHLT R260 - Radiation Biology and Protection in Diagnostic Radiology

Study of the biological effects of ionizing radiation and the standards and methods of protection. Emphasis is placed on X-ray interactions. Also included are discussions on radiation exposure standards and radiation monitoring.

Preparation for Course

P: AHLT R250.

Cr. 1-3.

IPFW course is 2 credit hours.

AHLT R281 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 6 credit hours.

AHLT R282 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R283 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R290 - Comprehensive Experience

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology under the direct supervision of a registered technologist. Successful completion involves mastery of all clinical aspects of the program.

Preparation for Course

P: AHLT R281, R282, R283.

Cr. 1-8.

IPFW course is 3 credit hours.

Total Credits: 83

Spanish Concentration (A.A.)**Program: Concentration A.A.****Department of International Language and Culture Studies****College of Arts and Sciences**

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language.
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture.
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts**Credits in IPFW General Education Area I:(9)**

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory
Credits: 6
- Credits in IPFW General Education Area III Credits: 6

- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Concentration Requirements

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning; ANTH L200 or LING L103 is recommended as a selection from IPFW General Education Area III. If you plan to continue for a bachelor's degree with a major in Spanish, see Part 5 for B.A. requirements.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

One of the following Credits: 3

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

One of the following Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

Women's Studies Concentration (A.A.)

Program: Concentration A.A.

College of Arts and Sciences

Classroom-Medical Building 272 ~ 260-481-6711 ~ www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- Demonstrate basic understanding of major issues in feminism.
- Demonstrate basic awareness of ways in which feminist scholarship has affected the subject matter of at least two arts and Sciences disciplines.
- Have the education tools for pursuing the bachelor of arts in Women's Studies.

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in women's studies (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

Program Requirements

- Credits in WOST or cross-listed humanities/visual arts Credits: 3
- Credits in WOST or cross-listed social science/science Credits: 3
- Additional credits in WOST or cross-listed courses Credits: 6

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Baccalaureate

These programs are offered by Indiana University.

Anthropology (B.A.)

Program: B.A

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

The student learning outcomes for the degree are as follows:

- Achieve familiarity with different cultures in at least two regions of the world
- Know the major anthropological approaches to understanding the human condition
- Be able to explain societies in a holistic manner
- Achieve competency in writing
- Demonstrate critical thinking
- Acquire quantitative skills for analysis
- Demonstrate a willingness to engage learning and scholarship as a life-long endeavor

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

To earn the B.A. with a major in anthropology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences

See Part 2 General Education Requirements for approved courses

- Additional credits in Area II: 3

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in ANTH) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Additional credits in anthropology courses, including two courses selected from Group A courses and two courses selected from Group B courses, below Credits: 15

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH H445 - History and Theory of Anthropology

An examination of the historical development of the field of anthropology concentrating upon the intellectual roots and context that surrounded its emergence as well as contemporary problems, perspectives, methods, and theories. Course designed for graduating anthropology majors.

Preparation for Course

P: ANTH E105 and B200.

Cr. 3.

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

Group A Regional Ethnography

ANTH E301 - Plain People of Indiana

Introduction to two representative groups of Plain People: Old Order (house) Amish and Old German Baptist Brethren. Topics include their beliefs and practices, societal structure, sense of community (in language, dress, architecture, transportation, schooling, demography), and the special problems that beset them as traditional societies in a technocratic age.

Cr. 3.

ANTH E310 - Introduction to the Cultures of Africa

Explores the vitality and diversity of African cultures today in communities ranging from town neighborhoods to remote villages and from desert to rainforest. Demonstrates the tenacity and creativity of human societies facing severe political, social, and ecological pressures, but also contributes new questions and answers to global debates about family values, ethnicity, terrorism, hunger, and economic growth.

Cr. 3.

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E341 - Culture of China

Survey of Chinese culture and society. Geography, history, linguistic and ethnic groups, social and political organizations, education, religion, etc.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E350 - European Ethnography

European peoples and cultures. Emphasis on comparison of cultural assumption and social organization of selected European cultures; techniques for anthropological research in European societies.

Preparation for Course

P: ANTH E105 or consent of instructor.

Cr. 3.

ANTH E479 - Indian Cultures of Peru

Detailed examination of past and present of one of the largest Indian populations in Latin America. Emphasis on the role of Indians in contemporary society.

Preparation for Course

P: consent of instructor.

Cr. 3.

Group B Topics in Anthropology

ANTH A495 - Individual Readings in Anthropology

Preparation for Course

P: consent of instructor.

Cr. 1-4.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

ANTH A496 - Field Study in Anthropology

Planning of research project during year preceding summer in field. Time spent in research must amount to at least one week for each credit hour granted. Research paper must be presented by end of semester following field study.

Preparation for Course

P: consent of instructor and department chair.

Cr. 3-8.

Notes

Maximum of 8 credits.

ANTH E102 - Anthropology of America

Anthropological analysis of American society: marriage, descent, kinship organization, religion, social stratification, and economic basis of social structure.

Cr. 3.

ANTH E400 - Undergraduate Seminar

Intensive examination of selected topics in anthropology. Emphasis upon analytic investigation and critical discussion.

Preparation for Course

P: ANTH E105.

Cr. 3.

Variable Title

(V.T.)

ANTH E401 - Ecology and Culture

How human beings, nature, and culture interrelate. Examination of the varied approaches used in hunting, agricultural, and industrial societies for adapting to the physical environment.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E402 - Gender in Cross-Cultural Perspective

This course considers the meaning and social implications of gender in human society. Cultural definitions of "male" and "female" gender categories as well as associated behavioral and structural differentiation of gender roles will be analyzed using current anthropological concepts and theories.

Cr. 3.

ANTH E405 - Principles of Social Organization

Comparative analysis of the social organization of selected societies from the perspectives of major theoretical positions in anthropology.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the non-Western culture studies requirement.

Eligible for graduate credit.

ANTH E406 - Anthropology and Documentary Films

Comparative analysis of historical and social contexts. Discussion of points of view and aims of individual filmmakers.

Cr. 3.

ANTH E420 - Economic Anthropology

Comparative study of technologies and economic systems of selected non-Western peoples.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E421 - The Anthropology of Aging

This course explores age and the aging process cross-culturally by looking at the specific cultural context in which individuals age and by analyzing similarities and differences across cultures.

Cr. 3.

ANTH E445 - Medical Anthropology

An examination of the cross-cultural properties of disease and curing. Focus on investigations into the ideology and meaning of illness, the relationship between patient and healer, and how responsibility for illness is assigned. Medical anthropology is concerned with knowledge about sociocultural contexts of disease and healing and with how such knowledge might inform the management of our own health problems.

Cr. 3.

Session Indicators

(spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E455 - Anthropology of Religion

Critical evaluation of current approaches to the analysis of religious myth, ritual, and symbolism. Problems in understanding religious beliefs of other cultures. Modern development of the anthropology of religion.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E462 - Anthropological Folklore

Function, forms, and interpretations of folklore in traditional societies. Folklore as an expression of continuity and change.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

ANTH E470 - Psychological Anthropology

The similarity and diversity of human personalities. How culture forms personalities and is formed by them. Focus on individual variation within a cultural framework.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH P220 - Rise and Fall of Ancient Civilizations

Focus on how societies develop from band and tribal level to state-level social organization. Special emphasis on the continuing evolution of the state.

Preparation for Course

P: ANTH P200.

Cr. 3.

ANTH P300 - Topics in Prehistory

World archaeology in the framework of major cultural stages. The methods, analysis, and significance of archaeological research.

Cr. 3.

ANTH P360 - Archaeology of North America

Introduction to antiquity of the American Indian, principal culture areas, and field methods and techniques incident to recovery of archaeological data and materials.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

ANTH P361 - Prehistory of Eastern North America

Survey of prehistoric cultural developments in eastern North America from man's first occupation of this area until European contact, set primarily within the framework of changing ecological adaptations.

Preparation for Course

P: ANTH P200 or P360 and consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P376 - Archaeology of Death

Examination of mortuary behavior using archaeological and biological data. Methods of studying variation in mortuary practices. Identification of skeletal remains in laboratory setting.

Preparation for Course

P: ANTH P200.

Cr. 3.

ANTH P382 - Archaeological Research Design

Construction and implementation of archaeological research design using a graphics-oriented computer simulation model. Computer displays sites, features, and artifacts located by student using various methods of survey and excavation. Hypothesis testing, sampling strategies, and budget constraints are emphasized.

Cr. 3.

ANTH P399 - Undergraduate Seminar

Intensive examination of selected topics in archaeology. Development of skills in analysis and criticism. Topic varies.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated once for credit.

ANTH P400 - Archaeological Methods and Techniques

Methods and mechanics of archaeology in field and laboratory. Use of survey instruments, drawing tools, and photographic equipment, treatment of recovered materials leading to printed report.

Preparation for Course

P: consent of instructor.

Cr. 2-4.

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

ANTH P405 - Fieldwork in Archaeology

Archaeological work directed toward field techniques: excavation and preservation of materials, surveying, photography, cataloguing.

Cr. 1-8.

Notes

One credit hour per full week of fieldwork.

Dual Level Course

Eligible for graduate credit. Maximum of 8 credits.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Art Education (B.A.)

Program: B.A. Art Education(All-Grade Education Program)

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/

The student learning outcomes for the degree are as follows:

- The Bachelor of Art in Art Education degree prepares the student to teach elementary, middle school, and junior high/senior high art.
- The Bachelor of Arts in Art Education program at IPFW promotes and cultivates the role of artist/teacher as the ideal educator of the arts in schools today. With a solid background in studio arts, student teachers use their experience as artists to develop a philosophy that aims to create authentic art making conditions in their future positions as art educators. Art educators learn to advocate for the arts and are given learning opportunities both in school and museum contexts as they grow to share learning and understanding of visual arts education.

The Bachelor of Art in Art Education degree is divided into three parts; 36 credit hours of General Education, 54 credit hours of art history and art studio courses, and 38 credit hours of Professional Education classes. A 3.00 GPA in the Content Field (art history and art studio) and a 2.5 cumulative GPA is required for this degree. A cumulative GPA of 2.5 from coursework taken from previous institutions or in IPFW Professional Education classes needs to be recorded. In addition each Area of General Education must maintain a 2.0 GPA. A total of 128 credits is required for graduation.

Components:	Credits
I. General Education	36
II. Content Field	54
III. Professional Education	38
Total	128

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(grade of B or higher)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or higher)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the Following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences

One class in: Astronomy, Chemistry, Geology, Physics, or Bioanthropology Credits: 3.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

Area III—The Individual, Culture, and Society

One of the following Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- FINA courses can not be used.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- VCD or FINA courses can not be used.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Class must be attained at IPFW.

College of Visual and Performing Arts Requirements Credits: 54**II. Content Area****Art History Requirements Credits: 6**

FINA H111 and H112 should be taken just prior to Praxis II testing (see Professional Teaching Requirements).

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

100 Level Foundations Requirements Credits: 12**FINA P121 - Drawing Fundamentals I-II**

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

(P121 is a prerequisite to P122)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio will consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level Fundamentals studio classes. Some students may be asked to re-take particular Foundation classes to attain department standards.

200 Level Studio Requirements Credits: 21

200 Level courses do not have to be taken in this order.

FINA P223 - Figure Drawing I

Introduction to drawing the human figure using various media and techniques. Basic anatomy; the skeletal and muscular structure of the human figure as related to drawing is included.

Cr. 3.

FINA P225 - Painting Fundamentals I

Introduction to painting methods and media and the further application of basic principles of composition through varied pictorial problems from still life, landscape, memory, and imagination.

Cr. 3.

FINA P231 - Sculpture Fundamentals

Student will work in a wide variety of sculptural mediums. Assignments will focus on idea-based expression as well as a thorough introduction to different tools and processes of sculptural construction. Projects will allow student expression within a guideline that explores natural and abstract images.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P233 - Metalsmithing Fundamentals

Understanding of the possibilities of the materials and an appreciation of the use of the tools essential for the creation of forms and objects in metal. Basic techniques, raising, planishing, casting, forging, and fabrication are taught. Inventiveness within the discipline imposed by this traditional art form is encouraged.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P235 - Ceramics Fundamentals

Fundamental techniques of forming by hand-building methods, glazing and firing clay objects. Introduction to the creative possibilities of this craft through projects in tile, pottery form, and sculpture. Emphasis on self-expression through good design and understanding the medium.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P241 - Printmaking Fundamentals

Study of materials, tools, processes in the various methods of printmaking (block printing, lithography, and intaglio) as they are used for contemporary graphic concerns.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

B.A. in Art Education Portfolio Review

Each student must submit a portfolio of 200 level work to attain formal acceptance into the B.A. in Art Education program. The portfolio review must be passed and recorded before students will be allowed to enter the Block 1 Teacher Education block of classes. Students presenting a portfolio for acceptance into the B.A. in Art Education program can declare an area of studio concentration, i.e. painting, sculpture, or can decide to take a variety of advanced studio classes. The portfolio should consist of 15-20 works, with at least two works from each 200 level Fundamentals course. It is highly recommended that students seek faculty advice on which works to submit for review. Faculty evaluations will be based on a student's strong knowledge and skills in:

- showing competence in representational drawing of volume, pictorial space, and the depiction of the human figure. An understanding of linear perspective should be evident.
- the ability to compose aesthetic element of line, tone/value, shape, texture, color, and 3D form in space.
- demonstrating technical and aesthetic excellence (for the 60 credit level) in your chosen major; i.e. drawing, ceramics, metalsmithing, painting, printmaking, or sculpture.
- (for 2D majors) drawing, painting, printmaking as well as the demonstration of competence and serious investigation in 3D media.
- (for 3D majors) ceramics, metalsmithing, and sculpture with competence and serious investigation in 2D media.

B.A. in Art Education Portfolio Review Outcome

A student applying for acceptance in the B.A. in Art Education program may be accepted, deferred, or denied. A student's acceptance into the B.A. in Art Education will allow them to advance into 300 level studio classes as a B.A. in Art Education major. A deferred student will be asked to re-submit their portfolio for consideration after re-taking requested classes. A student denied entry into the B.A. in Art Education program may wish to consider the B.A. program or apply once again for entry into the B.A. in Art Education program with permission from the department.

Advanced Studio Courses Credits: 15

300/400 Studio

- Five (5) advanced 300/400 studio courses need to be fulfilled in this area.
- 300 level classes must be taken prior to 400 level classes
- Two (2) Department of Visual Communications and Design (VCD) courses can be taken in this area.

Professional Education Requirements Credits: 38

Initial Requirement Block Credits: 4

Block should be completed within the sophomore year.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

Education Portfolio Checkpoint

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0 (field experience required)

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Admission to the TEP is required for remaining courses.

PPST Testing

PPST (Pre-Professional Skills Test)

Test results must be turned into Department of Fine Arts secretary prior to registering for Block 1 Teacher Education classes. Initial Requirement Block and all areas of the PPST must be completed, passed, and recorded prior to registration into Block 1 Teacher Education. The Department of Fine Arts 200 Level Portfolio Review must also be passed before entering Teacher Education Block 1. The IPFW School of Education has information about PPST study guides and testing schedules.

Block 1: Teacher Education Requirements Credits: 12

Block 1 must be completed before entering Block 2.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M330 - Foundations of Art Education and Methods I

Students develop a philosophy of art education while they explore the relationship between theory and practice in art education. Museum and public school participation required.

Cr. 3

(Methods I must be taken before Methods II) (requires field experience)

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3 (requires field experience)

Education Portfolio Checkpoint

Block 2: Professional Education Credits: 9

EDUC M430 - Foundations of Art Education and Methods II

The unique role of artist/educator as phenomenological examined both on a theoretical and practical level. Attention to curriculum development. Public school utilized for extension of class experience.

Cr. 3

(field experience required)

Education Portfolio Checkpoint

EDUC P254 - Educational Psychology for Teachers of All Grades

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3 (field experience required)

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Praxis II (Art Education Exam)

Praxis II must be passed and recorded prior to applying for a teaching license. Art History H111 and H112 (see above) should be taken just prior to Praxis II testing.

Student Teaching Credits: 13

- 10 week plus 6 week combination.
- Student must complete an application for student teaching one year before intended student teaching semester.

EDUC M482 - Student Teaching: All Grades

Full-time supervised student teaching in music at the elementary, junior high/middle school, and/or high school level in an accredited school within Indiana.

Cr. 1-16.

Notes

Additional fee.

Credits: 13

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Final Education Portfolio Checkpoint

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Fine Arts faculty. For a review of transferred studio credit, the student should provide the viewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

Biology (B.S.)

Program: B.S.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

Provide coursework, research experience, and advising for students who seek employment after the B.S. degree or who expect to enter graduate and professional schools.

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply those theories and principles to problem solving.
- Students should have demonstrated knowledge of the scientific method, and should be able to apply that knowledge to problem solving. Students should also have the ability to critically evaluate biological information.
- Students should have demonstrated the basic knowledge and experience of field and laboratory work and be able to communicate the results of an investigation.

Special Regulation for Biology Majors

Time Limit - All biology courses applied toward graduation must be completed within 10 years from the time the first biology course was completed.

To earn a B.S. with a major in biology, you must fulfill the requirements of IPFW and of the College of Arts and Sciences (see Part 4 and Part 8); earn a GPA of 2.30 or higher in BIOL 117, 119, 217, 218, 219, and 491 and in A/B-elective courses in biology (listed below); and complete the following courses:

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Or

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

(credits included in Biology Core, below)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Supporting Courses, below)

Area III—The Individual, Culture, and Society (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

(credits included in Supporting Courses, below)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

BIOL 491 - Senior Biology Seminar

Students critique and discuss seminar presentations. Each student must select a topic and give an oral presentation on it. Open only to senior biology majors.

Cr. 1.

Session Indicators

(fall, spring)

Supporting Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

One of the following sequences Credits: 8

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Or Select:

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

And

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Calculus and Statistics

The following calculus and statistics course pattern is typical. Course substitutions are possible with advisor approval. Please note that most graduate programs require a full year of calculus.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

One of the following sequences Credits: 8–10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

General Elective Courses (Credits: 16)

In the interest of broadly training our majors, students are required to take at least one course *with laboratory* from each of the A and B elective course lists below. The A elective courses focus on topics regarding the intact organism and its interaction with the environment, and so are organismal, population, community, and ecosystem in nature. The B elective courses focus on processes acting within the organism, and thus detail molecular, cellular, and organ-system mechanisms.

A-Electives

(organismal, population, community, and ecosystem)

BIOL 335 - Animal Behavior

Instinct vs. learning; genetics and development of learning; neurobiology; behavioral ecology: habitat selection, mating systems, foraging behavior; sociobiology and human behavior.

Preparation for Course

P: BIOL 117, 119, or equivalent.

Cr. 3.

separate laboratory available (BIOL 336)

BIOL 336 - Animal Behavior Lab

Discussion of methods for collecting and assessing behavioral data; experiments examining learning, thermoregulation, foraging, and habitat use. Experiments will be conducted as group projects.

Preparation for Course

C: BIOL 335 or permission of instructor.

Cr. 1.

Hours

Lab. 3.

BIOL 345 - Vertebrate Biology

Vertebrate diversity and the manner in which species are designed for their particular lifestyles, the relatedness and origins of the major vertebrate taxa, the basic vertebrate body plan, adaptations for feeding and locomotion, natural history of selected vertebrates, current conservation issues regarding vertebrates. Field experiences will include two weekend day trips.

Preparation for Course

P: BIOL 117, 119.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 434 - Marine Community Ecology

Lecture involves a survey emphasizing tropical marine communities including coral reefs, mangrove estuaries, turtle grass, and hard and soft substrate intertidal communities. Community processes such as predation, competition, mutualism, zonation, and behavior are discussed as well as physical-chemical factors such as tides, currents, waves, and salinity. Course includes a required field trip to a marine biological station over spring break for the lab portion. Student required to pay for expenses associated with field trip. Prerequisite for field trip: swimming/snorkeling ability; use of scuba gear is optional.

Preparation for Course

P: one year of college biology; second semester may be taken concurrently.

Cr. 3.

Hours

Class 2, Lab. 1.

Session Indicators

(spring)

includes laboratory

BIOL 445 - Aquatic Biology

Introduction to the roles of physical and chemical factors, predation, and competition in determining the abundance of freshwater organisms and regulating the productivity of lake ecosystems. Laboratories emphasize field work and group or individual projects at the Crooked Lake Biological Station.

Preparation for Course

P: BIOL 117 and one year of general chemistry.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 501 - Field Botany

Field botany is the study of plants in a landscape context. Major course themes include plant identification; plant community analysis and classification, focusing on major plant community types in northeast Indiana; an introduction to basic concepts of geology, hydrology, and soil science as they relate to the distribution and maintenance of plant communities, and a module on habitat preservation and restoration. The course includes two required Saturday field trips.

Preparation for Course

P: BIOL 217 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 502 - Conservation Biology

An investigation of the foundations of conservation biology and emergent topics within the field: conservation ethics, the Endangered Species Act, island biogeography, effective population size, minimum viable populations, edge effects, managing for threatened species, and refuge design.

Preparation for Course

P: BIOL 217 and 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 505 - Biology of Invertebrate Animals

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

Preparation for Course

P: Biol 109 or 117 and 119.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 520 - Contemporary Parasitology

This course is designed to provide students, in the various disciplines, with information on parasites that will augment their training to pursue more advanced areas in medicine, allied health, animal, and environmental sciences.

Preparation for Course

P: BIOL 217 and 219, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 543 - Population Ecology

Interactions that determine the dynamics, abundance, and persistence of natural populations. Topics include competition, predation and disease, metapopulations, computer simulation and data analysis, discussions of classical and current literature.

Preparation for Course

P: BIOL 217, 218, and 219; a statistics course is recommended.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 556 - Physiology I

General and comparative physiology. Principles of physiology. Nerve and muscle, temperature regulation, ion and water balance. The critical evaluation of original research papers.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 558)

BIOL 579 - Fate of Chemicals in the Environment

An investigation of the fate and transport of chemicals in the environment, including air, soil/sediment, and water. Special consideration will be given to the degradation of chemicals by microorganisms and to methods to maximize their activities (bioremediation).

Preparation for Course

P: BIOL 217 and a course in organic chemistry.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 580 - Evolution

A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within areas, as well as evidences for the possible mechanisms of evolutionary change.

Preparation for Course

P: BIOL 217 or equivalent.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 582 - Ecotoxicology

An investigation into the effects of environmental pollutants on ecosystem structure and function. The fate of pollutants in the environment is considered as it relates to the direct and indirect effects of chemicals on biota. Also considered are regulatory aspects of ecotoxicology.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 586 - Topics in Behavior and Ecology

In-depth examination of topics in ecology and behavior not treated extensively in other courses, e.g., behavioral ecology of reproduction, foraging ecology and behavior, and the behavioral ecology of defense against predators.

Preparation for Course

P: an ecology course or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated for credit with a different topic.

Dual Level Course

Undergraduate-Graduate

BIOL 592 - The Evolution of Behavior

An investigation of behaviors as adaptations: specializations of sensory and motor mechanisms involved in behavior, animal communication systems, behavioral ecology, patterns of behavior as solutions to ecological problems such as predator avoidance and resource exploitation. Emphasis will be on theoretical principles; examples will be broadly comparative.

Preparation for Course

P: BIOL 580 or equivalent or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 598 - Biology of Fish

A comprehensive study of fish biology that covers topics from physiology to ecology to fisheries management. Lectures include discussions of controversial issues and current research from primary literature. Additionally, the class will participate in several field collecting trips, sometimes in association with state fish biologists, and complete an independent student research project.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

separate laboratory available (ENTM 207)

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 505 - Molecular Ecology and Evolution

Lectures cover the genetic attributes of both conventional and contemporary molecular markers. Discussions focus primarily on the use of DNA-based markers to address conceptual issues in ecology and evolutionary biology (e. g., mating systems, systematics, phylogeography). Offered in odd-numbered years.

Preparation for Course

P: BIOL 218; one course in biochemistry is recommended. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

FNR 523 - Aquaculture

Historical perspectives and current practices in aquaculture, including production systems, feeds, water quality requirements, and diseases of commercially important species.

Preparation for Course

P: BIOL 217 and 219 or permission of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

B-Electives

(molecular, cellular, and organ-system)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

includes laboratory

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

includes laboratory

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

separate laboratory available (BIOL 382)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 506 - Human Molecular Genetics

A molecular characterization of the human genome, cloning human disease genes, the molecular basis of human genetic disorders that are due to biochemical defects and chromosomal abnormalities, molecular approaches in diagnosis of human disorders, mapping of human genes, and gene therapy.

Preparation for Course

P: BIOL 218; one semester of organic chemistry or biochemistry or signature of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 509 - Molecular Biology and Applications

Up-to-date recombinant DNA methods will be covered; how molecular biology methods have enhanced our understanding of basic biological functions and structures; the applicability of molecular biology in pharmaceuticals, vaccine production, agriculture, bioremediation, and synthesis of commercial products.

Preparation for Course

P: BIOL 218, and CHM 254 or CHM 533, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 584)

BIOL 515 - Molecular Genetics

A molecular approach to the problems of structure, duplication, mutation, and phenotypic expression of genetic material.

Preparation for Course

P: BIOL 218, 381, and one semester of organic chemistry.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 516 - Molecular Biology of Cancer

A detailed course examining the molecular mechanisms controlling the growth of animal cells. Emphasis will be placed on current experimental approaches to defining the molecular basis of growth regulation in developing systems and the uncontrolled proliferation of cells in metabolic disorders, such as cancer.

Preparation for Course

P: BIOL 218, 381 or graduate student standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 533 - Medical Microbiology

Host-parasite relationships, immunology, bacteria, and viruses associated with infectious diseases.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 540 - Biotechnology

Examines research, techniques, and applications for several technologies situated at currently recognized biological frontiers, including recombinant DNA technology, hybridoma technology, protein engineering, agricultural research, and microbiological engineering.

Preparation for Course

P: BIOL 217 and 381 or consent of instructor.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 544 - Principles of Virology

Introduction to the molecular biology of animal, plant, and bacterial viruses. Interaction of viruses and the host cell, viral replication, mechanisms of viral pathogenesis, immunology, chemotherapy, viral genetics, oncology, and vaccines.

Preparation for Course

P: BIOL 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 559 - Endocrinology

The study of hormone function. Consideration will be given to the role of hormones in growth, development, metabolism, homeostasis, and reproduction.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 565 - Immunobiology Lab

A survey course in laboratory experiments and demonstrations using classical immunological techniques and modern immunoassays with up-to-date technological equipment. The laboratory supplements the lecture portion of BIOL 537 but is not required. Typical assays include immuno-double diffusion Ouchterlony methodology, immunofluorescence identification of cell surface antigens, cytokine and mitogen stimulated proliferation of immune cells, ELISA assays, and PAGE with Western blotting.

Preparation for Course

P or C: BIOL 537.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 566 - Developmental Biology

Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches.

Preparation for Course

P: BIOL 218.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 567)

BIOL 567 - Laboratory in Developmental Biology

Descriptive and experimental study of the development of animals. Laboratories do not necessarily follow lecture material.

Preparation for Course

P or C: BIOL 566 or consent of instructor.

Cr. 1.

Hours

Lab. 2.

Dual Level Course

Undergraduate-Graduate

BIOL 584 - Molecular Biology and Applications Laboratory

A lab consisting of mini-projects that emphasize the applications of several molecular biological techniques, such as Southern blotting, DNA-DNA hybridization, purification and cloning of genes into plasmid vectors, genetic engineering and PCR amplification. Applications emphasized include DNA fingerprinting in humans, evolution, and systematics by comparing 18S and 16S rDNA from different species, and genetic engineering of yeast with genes encoding beta carotene.

Preparation for Course

P or C: BIOL 509.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

Free Electives

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Biology with Life Science Teaching Certification (B.S.)

Program: B.S.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

Learning Goals

Provide coursework, research experience, and advising for students who seek employment after the B.S. degree or who expect to enter graduate and professional schools.

Learning Outcomes

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply those theories and principles to problem solving.
- Students should have demonstrated knowledge of the scientific method, and should be able to apply that knowledge to problem solving. Students should also have the ability to critically evaluate biological information.
- Students should have demonstrated the basic knowledge and experience of field and laboratory work and be able to communicate the results of an investigation.

The study of biology is an excellent way to prepare for a career in teaching because it provides the student with a solid foundation in science as well as in teaching. Students who plan to earn a B.S. with a major in biology with life science teaching certification should consult regularly with the coordinator of advising of the School of Education.

To earn a B.S. with a major in biology with life science teaching certification, you must fulfill the requirements specified by the IPFW School of Education and fulfill the requirements of IPFW and of the College of Arts and Sciences with the exception of the foreign language requirement (see Part 4 and Part 8).

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Students who qualify may elect to do an independent project supervised by a faculty member. Credits earned in these courses (BIOL 295 or BIOL 595) cannot be used to satisfy A/B-elective requirements.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- MA - Mathematics course approved for IPFW General Education Area I

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Area III—The Individual, Culture, and Society (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

One of the following Credits: 0

(credits included in Supporting Courses, below)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

School of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

BIOL 491 - Senior Biology Seminar

Students critique and discuss seminar presentations. Each student must select a topic and give an oral presentation on it. Open only to senior biology majors.

Cr. 1.

Session Indicators

(fall, spring)

Supporting Courses (40–42 credits)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

One of the following Credits: 4

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

or

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

One of the following sequences Credits: 8–10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

General Elective Courses (Credits: 10–12)

You must complete at least one course with a laboratory in each group.

A-Electives

(organismal, population, community, and ecosystem)

BIOL 335 - Animal Behavior

Instinct vs. learning; genetics and development of learning; neurobiology; behavioral ecology: habitat selection, mating systems, foraging behavior; sociobiology and human behavior.

Preparation for Course

P: BIOL 117, 119, or equivalent.

Cr. 3.

separate laboratory available (BIOL 336)

BIOL 336 - Animal Behavior Lab

Discussion of methods for collecting and assessing behavioral data; experiments examining learning, thermoregulation, foraging, and habitat use. Experiments will be conducted as group projects.

Preparation for Course

C: BIOL 335 or permission of instructor.

Cr. 1.

Hours

Lab. 3.

BIOL 345 - Vertebrate Biology

Vertebrate diversity and the manner in which species are designed for their particular lifestyles, the relatedness and origins of the major vertebrate taxa, the basic vertebrate body plan, adaptations for feeding and locomotion, natural history of selected vertebrates, current conservation issues regarding vertebrates. Field experiences will include two weekend day trips.

Preparation for Course

P: BIOL 117, 119.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 434 - Marine Community Ecology

Lecture involves a survey emphasizing tropical marine communities including coral reefs, mangrove estuaries, turtle grass, and hard and soft substrate intertidal communities. Community processes such as predation, competition, mutualism, zonation, and behavior are discussed as well as physical-chemical factors such as tides, currents, waves, and salinity. Course includes a required field trip to a marine biological station over spring break for the lab portion. Student required to pay for expenses associated with field trip. Prerequisite for field trip: swimming/snorkeling ability; use of scuba gear is optional.

Preparation for Course

P: one year of college biology; second semester may be taken concurrently.

Cr. 3.

Hours

Class 2, Lab. 1.

Session Indicators

(spring)

includes laboratory

BIOL 445 - Aquatic Biology

Introduction to the roles of physical and chemical factors, predation, and competition in determining the abundance of freshwater organisms and regulating the productivity of lake ecosystems. Laboratories emphasize field work and group or individual projects at the Crooked Lake Biological Station.

Preparation for Course

P: BIOL 117 and one year of general chemistry.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 501 - Field Botany

Field botany is the study of plants in a landscape context. Major course themes include plant identification; plant community analysis and classification, focusing on major plant community types in northeast Indiana; an introduction to basic concepts of geology, hydrology, and soil science as they relate to the distribution and maintenance of plant communities, and a module on habitat preservation and restoration. The course includes two required Saturday field trips.

Preparation for Course

P: BIOL 217 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 502 - Conservation Biology

An investigation of the foundations of conservation biology and emergent topics within the field: conservation ethics, the Endangered Species Act, island biogeography, effective population size, minimum viable populations, edge effects, managing for threatened species, and refuge design.

Preparation for Course

P: BIOL 217 and 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 505 - Biology of Invertebrate Animals

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

Preparation for Course

P: Biol 109 or 117 and 119.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 520 - Contemporary Parasitology

This course is designed to provide students, in the various disciplines, with information on parasites that will augment their training to pursue more advanced areas in medicine, allied health, animal, and environmental sciences.

Preparation for Course

P: BIOL 217 and 219, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 543 - Population Ecology

Interactions that determine the dynamics, abundance, and persistence of natural populations. Topics include competition, predation and disease, metapopulations, computer simulation and data analysis, discussions of classical and current literature.

Preparation for Course

P: BIOL 217, 218, and 219; a statistics course is recommended.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 556 - Physiology I

General and comparative physiology. Principles of physiology. Nerve and muscle, temperature regulation, ion and water balance. The critical evaluation of original research papers.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 558)

BIOL 579 - Fate of Chemicals in the Environment

An investigation of the fate and transport of chemicals in the environment, including air, soil/sediment, and water. Special consideration will be given to the degradation of chemicals by microorganisms and to methods to maximize their activities (bioremediation).

Preparation for Course

P: BIOL 217 and a course in organic chemistry.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 580 - Evolution

A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within areas, as well as evidences for the possible mechanisms of evolutionary change.

Preparation for Course

P: BIOL 217 or equivalent.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 582 - Ecotoxicology

An investigation into the effects of environmental pollutants on ecosystem structure and function. The fate of pollutants in the environment is considered as it relates to the direct and indirect effects of chemicals on biota. Also considered are regulatory aspects of ecotoxicology.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 586 - Topics in Behavior and Ecology

In-depth examination of topics in ecology and behavior not treated extensively in other courses, e.g., behavioral ecology of reproduction, foraging ecology and behavior, and the behavioral ecology of defense against predators.

Preparation for Course

P: an ecology course or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated for credit with a different topic.

Dual Level Course

Undergraduate-Graduate

BIOL 592 - The Evolution of Behavior

An investigation of behaviors as adaptations: specializations of sensory and motor mechanisms involved in behavior, animal communication systems, behavioral ecology, patterns of behavior as solutions to ecological problems such as predator avoidance and resource exploitation. Emphasis will be on theoretical principles; examples will be broadly comparative.

Preparation for Course

P: BIOL 580 or equivalent or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 598 - Biology of Fish

A comprehensive study of fish biology that covers topics from physiology to ecology to fisheries management. Lectures include discussions of controversial issues and current research from primary literature. Additionally, the class will participate in several field collecting trips, sometimes in association with state fish biologists, and complete an independent student research project.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

separate laboratory available (ENTM 207)

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 505 - Molecular Ecology and Evolution

Lectures cover the genetic attributes of both conventional and contemporary molecular markers. Discussions focus primarily on the use of DNA-based markers to address conceptual issues in ecology and evolutionary biology (e. g., mating systems, systematics, phylogeography). Offered in odd-numbered years.

Preparation for Course

P: BIOL 218; one course in biochemistry is recommended. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

FNR 523 - Aquaculture

Historical perspectives and current practices in aquaculture, including production systems, feeds, water quality requirements, and diseases of commercially important species.

Preparation for Course

P: BIOL 217 and 219 or permission of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

B-Electives

(molecular, cellular, and organ-system)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

includes laboratory

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

includes laboratory

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science

majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

separate laboratory available (BIOL 382)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 506 - Human Molecular Genetics

A molecular characterization of the human genome, cloning human disease genes, the molecular basis of human genetic disorders that are due to biochemical defects and chromosomal abnormalities, molecular approaches in diagnosis of human disorders, mapping of human genes, and gene therapy.

Preparation for Course

P: BIOL 218; one semester of organic chemistry or biochemistry or signature of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 509 - Molecular Biology and Applications

Up-to-date recombinant DNA methods will be covered; how molecular biology methods have enhanced our understanding of basic biological functions and structures; the applicability of molecular biology in pharmaceuticals, vaccine production, agriculture, bioremediation, and synthesis of commercial products.

Preparation for Course

P: BIOL 218, and CHM 254 or CHM 533, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 584)

BIOL 515 - Molecular Genetics

A molecular approach to the problems of structure, duplication, mutation, and phenotypic expression of genetic material.

Preparation for Course

P: BIOL 218, 381, and one semester of organic chemistry.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 516 - Molecular Biology of Cancer

A detailed course examining the molecular mechanisms controlling the growth of animal cells. Emphasis will be placed on current experimental approaches to defining the molecular basis of growth regulation in developing systems and the uncontrolled proliferation of cells in metabolic disorders, such as cancer.

Preparation for Course

P: BIOL 218, 381 or graduate student standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 533 - Medical Microbiology

Host-parasite relationships, immunology, bacteria, and viruses associated with infectious diseases.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 565)

BIOL 540 - Biotechnology

Examines research, techniques, and applications for several technologies situated at currently recognized biological frontiers, including recombinant DNA technology, hybridoma technology, protein engineering, agricultural research, and microbiological engineering.

Preparation for Course

P: BIOL 217 and 381 or consent of instructor.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 544 - Principles of Virology

Introduction to the molecular biology of animal, plant, and bacterial viruses. Interaction of viruses and the host cell, viral replication, mechanisms of viral pathogenesis, immunology, chemotherapy, viral genetics, oncology, and vaccines.

Preparation for Course

P: BIOL 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 559 - Endocrinology

The study of hormone function. Consideration will be given to the role of hormones in growth, development, metabolism, homeostasis, and reproduction.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 565 - Immunobiology Lab

A survey course in laboratory experiments and demonstrations using classical immunological techniques and modern immunoassays with up-to-date technological equipment. The laboratory supplements the lecture portion of BIOL 537 but is not required. Typical assays include immuno-double diffusion Ouchterlony methodology, immunofluorescence identification of cell surface antigens, cytokine and mitogen stimulated proliferation of immune cells, ELISA assays, and PAGE with Western blotting.

Preparation for Course

P or C: BIOL 537.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 566 - Developmental Biology

Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches.

Preparation for Course

P: BIOL 218.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 567)

BIOL 567 - Laboratory in Developmental Biology

Descriptive and experimental study of the development of animals. Laboratories do not necessarily follow lecture material.

Preparation for Course

P or C: BIOL 566 or consent of instructor.

Cr. 1.

Hours

Lab. 2.

Dual Level Course

Undergraduate-Graduate

BIOL 584 - Molecular Biology and Applications Laboratory

A lab consisting of mini-projects that emphasize the applications of several molecular biological techniques, such as Southern blotting, DNA-DNA hybridization, purification and cloning of genes into plasmid vectors, genetic engineering and PCR amplification. Applications emphasized include DNA fingerprinting in humans, evolution, and systematics by comparing 18S and 16S rDNA from different species, and genetic engineering of yeast with genes encoding beta carotene.

Preparation for Course

P or C: BIOL 509.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

School of Education Requirements (Credits: 37-41)

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements**EDUA F300 - Topical Exploration in Education**

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Block II

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Student Teaching**EDUC M480 - Student Teaching in the Secondary School**

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(Optional: Practicum in Middle School) Credits: 4

Total Credits: 131–135

Business (B.S.B.)

Program: B.S.B.

SBMS Undergraduate Student Success Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

The student learning outcomes for the degree are as follows:

- Upon completion of the Bachelors in Business Degree, students will:
- Be able to integrate fundamental principles of business theory and practice.
- Be able to solve problems by modeling, analyzing data (qualitative and numeric), and using critical thinking skills.
- Be able to understand the global and cultural implications of business decisions.
- Be able to understand ethical considerations in business decision.
- Be able to understand the relationship between the community and business.
- Be able to demonstrate the effective communication and teamwork skills.
- Be prepared for life-long learning in a dynamic environment.

The faculty of the Richard T. Doermer School of Business and Management Sciences believe that quality in product and services, competitiveness in the global marketplace, and professionalism are critical to business success. As a result, the undergraduate business curriculum is designed around the principles of competitiveness, quality, and professionalism. Faculty members are dedicated to the development of business professionals who have the knowledge and skills to contribute effectively to their organizations and community.

A significant portion of the B.S.B. curriculum is composed of courses that provide a basic understanding of principles and practices involved in the management of business firms. Another large component, slightly more than half of your credits, is the general education core. These courses provide a well-rounded background necessary for success in a diverse business environment. Further, in order to ensure a balanced educational program, the business curriculum offers ample opportunities to take courses in a specific concentration area of interest to you.

The B.S.B. program is accredited by the International Association for Management Education (AACSB), which provides a voluntary mechanism of quality control. AACSB is the most prestigious business accrediting body in the nation. Only about one-quarter of all business schools in the nation possess this distinction.

Your initial courses are selected from introductory-level general education, business, and economics subjects. When you have qualified for admission to the B.S.B. program, additional opportunities are provided for in-depth studies in a variety of advanced business, management, and analytical subjects. These advanced studies help you prepare for positions of increasing executive responsibility in the business community.

At the time you are admitted to the B.S.B. program, you must declare a specialization in one of five concentrations: accounting, business economics, finance, management, or marketing.

Admission

Students are admitted as pre-business students until they have completed the specific pre-business requirements needed for admission to the Bachelor's degree program.

To be admitted to the B.S.B. program applicants must have a cumulative GPA of 2.00 or higher and will have completed at least 60 credits that apply toward the degree, including the courses listed below. Within this course listing, successful applicants will have (1) a grade of C or better in each course marked with an * and (2) a GPA of 2.30 or better (the grade for ENG W131 is not included in this GPA calculation).

Courses Specifically Required for Admission to the B.S.B. Program

Course Number and Title		Credits
BUS A201*	<i>Principles of Financial Accounting</i>	3
BUS A202*	<i>Principles of Managerial Accounting</i>	3
BUS K211*	<i>Spreadsheets for Business</i>	1
BUS K212*	<i>Introduction to Database Management</i>	1
BUS K213*	<i>Internet Access and Data Analysis for Business</i>	1
BUS L200*	<i>Elements of Business Law</i>	3
BUS W204*	<i>Social, Legal, and Ethical Implications of Business Decisions</i>	3
COM 114	<i>Fundamentals of Speech Communication</i>	3
ECON E201*	<i>Introduction to Microeconomics</i>	3
ECON E202*	<i>Introduction to Macroeconomics</i>	3
ECON E270*	<i>Introduction to Statistical Theory in Economics and Business I</i>	3
ENG W131*	<i>Elementary Composition I (or equivalent)</i>	3
ENG W233*	<i>Intermediate Expository Writing</i>	3
MA 229	<i>Calculus for the Managerial, Social, and Biological Sciences I</i>	3
PSY 120 OR	<i>Elementary Psychology</i>	3
SOC S161	<i>Principles of Sociology</i>	3

Two additional rules apply to applicants' progress through the above courses:

1. No more than 6 credits of these courses may be repeated, and no course may be repeated more than once.
2. Both the original and the repeat grades earned in the above courses will be used to compute the admission GPA. This includes courses that you have taken or repeated at IPFW and other IU campuses. Students who transfer in more than 20 credits of the 39 credits listed will be admitted to the B.S.B. program on a probationary basis.

Note:

Bachelor's degree programs in business are offered at other Indiana University and IU-Purdue campuses. Since admission and graduation requirements vary among these campuses, you must meet the admission and graduation requirements of the campus from which you intend to graduate.

Enrollment in Business Courses Numbered 300 and Above

Unless you have attained junior class standing and met at least one of the following conditions, you are not permitted to enroll in a business course numbered 300 or above:

- You have been admitted to the B.S.B. program at IPFW.
- The course is a specified requirement for another bachelor's degree program or minor in which you are enrolled and you have completed all course prerequisites.
- You have obtained written permission from the department through which the course is offered.

If you have enrolled and are not eligible, you will be withdrawn from the course.

B.S.B. REQUIREMENTS

Many of the upper level courses required for this degree are sequenced, and many are offered only in alternate semesters. Therefore, regardless of the number of credits you may have earned prior to admission to the B.S.B. program, the school cannot guarantee that you will be able to complete all degree requirements in fewer than four regular semesters after admission.

To earn the B.S.B., you must complete a minimum of 123 credits as specified below. You must satisfy the requirements of IPFW (see Part 8) and the Richard T. Doermer School of Business and Management Sciences, earn a grade of C or better in those courses marked with an * above, earn a grade of C or better in each BUS and ECON course, and complete the four categories of requirements described below. Developmental courses (e.g., ENG R150, R151, and W130; MA 109, 111, and 113) do not apply to degree requirements.

Your final consecutive 30 credits must be taken at IPFW after you have been formally admitted to the B.S.B. program. No more than 50 percent of the 123 credits may be in business or economics courses.

IPFW General Education Requirements (53 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of C or better required)

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

Three credits from the courses listed below and then three additional credits in either PSY 120 or SOC S161.

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

OR

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

OR

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

OR

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

OR

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

OR

PSY 335 - Stereotyping and Prejudice

This course examines the topics of stereotyping, prejudice, and discrimination from a social psychological perspective. Relying on empirical findings and relevant theoretical approaches, the course moves beyond lay opinions to explore the social psychological foundations and forms of stereotyping and prejudice, and to examine various strategies for reducing intergroup biases.

Cr. 3.

OR

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

Psy 120 / Soc S161

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

OR

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

- Additional credits in approved Area IV courses: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

SBMS Requirements

- Additional credits in general education courses excluding business, economics, and OLS courses Credits: 8

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate.

This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(grade of C or better required)

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(if not used in Area I)

Core and Concentration (Major) Courses (46 credits)

Business Principles (16 credits)

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS J100 - Introduction to College and Business Careers

An orientation to the college environment and to the different careers in the field of business. Students will develop the skills needed to be successful college students and will be introduced to various business career options.

Cr. 1.

Session Indicators

Fall and Spring

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Economics Principles (9 credits)

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

Management Processes (15 credits)

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K321 - Management of Information Technology

An introduction to information systems and technology and their role in the modern business enterprise. Topics include computer-based information systems; managers' role in use, acquisition, and control of information systems and technology for a competitive advantage; ethical use of information; global information systems; and emerging information technologies.

Preparation for Course

P: BUS K212; P or C: BUS F301, P301; junior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Management Policy and Strategy (6 credits)

BUS J401 - Policy and Strategy

The capstone business course integrating, via case analysis, functional areas of study into a comprehensive real-world experience. Emphasis on critical thinking, analysis, strategic planning, and implementation of astute, ethical plans to gain a competitive advantage in the global marketplace.

Preparation for Course

P: BUS F301, M301, P301, Z302; senior class standing — 90 credit hours.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W430 - Leadership, Teamwork, and Group Dynamics in Organizations

An in-depth study of theories of leadership and their impact on organizational effectiveness. Special emphasis on leadership and its interaction with teamwork and group dynamics as well as its special role in managing organizational change in business. The course utilizes a case approach with attention to problem solving.

Preparation for Course

P: BUS Z302.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Area Concentration Credits: 12–24

12–24 credits in an Area Concentration: Upon admission to the B.S.B. program, you will select one of the following five concentrations. While you may change your concentration at any time during your degree program, changes made after your junior year may result in exceeding the 123 credits required to complete your degree. Specific concentration requirements are listed below.

General Elective Courses Credits: 0–12

0–12 sufficient credits from either business or nonbusiness courses, excluding organizational leadership and supervision courses, to complement your professional and education objective and bring your degree total to at least 123 credits.

Total Credits: 123

Chemistry (B.S.)

Program: B.S.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

Students will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

- **Chemical literature**

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- - Analytical Chemistry
 - Analytical methods (classical and instrumental)
 - Sensitivity and detection limits
 - Statistical treatment of data
- Biochemistry (for premedicine and pre dental options)
 - Structure, metabolic relationships, and regulation of biomolecules
- General Chemistry
 - Semi-quantitative microscopic model of the physical universe based on macroscopic observations
 - Terminology
 - Periodic relationships
 - Elementary computational skills
 - Introductory laboratory skills
- Inorganic Chemistry
 - Chemical bonding and structure
 - Reactivity, reaction mechanisms, and properties
 - Solid state and material science
 - Organometallic chemistry
 - Spectroscopic determination of structure
- Organic Chemistry
 - Chemical bonding and structure including valence bond and molecular orbital theories
 - Reactivity, reaction mechanisms, and properties of the important functional groups
 - Synthesis
 - Spectroscopic determination of structure
 - Material science and bio-organic chemistry
- Physical Chemistry
 - Mathematical and physical principles that underlie modern Chemistry
 - Detailed understanding of the modern microscopic model of the universe
 - The principal topic areas are:
 1. Quantum Chemistry
 2. Thermodynamics
 3. Statistical mechanics
 4. Spectroscopy
 5. Kinetics

The Bachelor of Science with a major in chemistry program is appropriate for premedical and pre dental students and as preparation for other careers. With appropriate electives and further education, this program allows you to combine chemistry with other fields of study that support careers such as geochemist, computer scientist, biologist, science librarian, science writer, chemical salesperson, patent attorney, industrial chemist, or environmental chemist.

To earn the B.S. with a major in chemistry, in addition to satisfying the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), you must complete the following courses with a cumulative GPA of 2.00 or higher in all CHM courses numbered 300 and above:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

(credits included in Supporting Courses, below)

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Major Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

(credits included in Supporting Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in CHM) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Credits in a modern foreign language Credits: 8

Core and Concentration (Major) Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 265 - Organic Chemistry Laboratory

Laboratory experiments include a large number of techniques for sophisticated organic syntheses. The preparations are designed not only to illustrate the classical reactions discussed in CHM 261, but also to allow for wider application of the principles involved.

Preparation for Course

C: CHM 261.

Cr. 2.

Hours

Lab. 6

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 266 - Organic Chemistry Laboratory

A continuation of CHM 265. A substantial portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify "unknowns" and mixtures and is introduced to some modern instrumental techniques.

Preparation for Course

P: CHM 265; C: CHM 262.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 280 - Chemical Literature

A survey of the tools employed for the effective and efficient search for and the retrieval and analysis of chemical information including online databases, chemical abstracts, patents, handbooks, encyclopedias, and comprehensive works.

Preparation for Course

P: CHM 251 or CHM 255 or CHM 261.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 342 - Inorganic Chemistry

Interpretation and correlation of the physical and chemical properties of inorganic compounds in terms of their electronic configurations and molecular structures. A development of the earlier treatment of the representative elements and the transition elements including magnetic and spectral properties of coordination compounds.

Preparation for Course

P: CHM 218; C: CHM 384.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 376 - Physical Chemistry Laboratory

Preparation for Course

C: CHM 384.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 383 - Physical Chemistry

Kinetic theory of gases, gas equations of state, Maxwell-Boltzmann distribution. Classical thermodynamics including the first, second, and third laws, spontaneity, chemical potential, phase equilibria. Introduction to quantum mechanics: postulates of quantum theory, linear operators, Heisenberg indeterminacy principle, Pauli principle, orbital and spin

angular momentum. Simple quantum systems such as particle-in-a-box, harmonic oscillator, hydrogen atom. Symmetry. Atomic and molecular spectroscopy.

Preparation for Course

P: CHM 116, MA 261, and PHYS 251.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 384 - Physical Chemistry

Basic kinetics and chemical reactions: first, second, third order reactions, elementary steps, macroscopic view in terms of concentrations and activities, calculation of equilibrium constants, thermodynamic interpretation of transition state theory. Solution thermodynamics: pure solutions, mixtures, ideal solutions (Raoult's law), ideally dilute solutions (Henry's law), Debye-Hückel theory, colligative properties. Electrochemistry: relationship to thermodynamics and chemical equilibrium. Photochemistry, nuclear magnetic resonance spectroscopy, electrical and magnetic properties of matter.

Preparation for Course

P: 383.

Cr. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

CHM 424 - Analytical Chemistry II

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

Preparation for Course

P: CHM 321; C: CHM 384.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Not required for premedicine, predoctoral, physical science teaching or chemistry teaching certification options.

One of the following Credits: 1

CHM 495 - Seminar in Chemistry

Discussion of topics in analytical, inorganic, organic, and physical chemistry and biochemistry. Students are required to select a topic from the primary literature, which must be approved by the coordinator of the seminar series. Students must make an oral presentation of the topic and submit a written report. Open to juniors and seniors majoring in chemistry. May be repeated for credit.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 496 - Advances in Chemistry I

Seminars on recent developments or topics not normally covered in regular courses. Attendance at all departmental seminars is required and students must submit a brief synopsis of each seminar attended.

Preparation for Course

P: two years of college chemistry.

Cr. 0.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 497 - Advances in Chemistry II

Continuation of 496. No credit for 497 unless 496 has been completed. Attendance at all departmental seminars is required and students must submit a brief synopsis of each seminar attended. In addition, students are required to submit a written report on a topic chosen from the primary literature and approved by the coordinator of the seminar series. The 496-497 sequence may be repeated for credit.

Preparation for Course

P: CHM 496.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Supporting Courses

- Credits in CS 106, 160, or 210, or equivalent Credits: 3

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Free Electives

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Premedicine Option

In addition to the requirements for the B.S. with a major in chemistry, students pursuing the premedicine option must take the following courses:

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 534 - Introductory Biochemistry

Continuation of CHM 533 with emphasis on enzymatic catalysis and metabolic transformations.

Preparation for Course

P: CHM 533 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

One of the following sequences Credits: 8

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

or

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

Additional Credits: 14

Predental Option

In addition to the requirements for the B.S. with a major in chemistry, students pursuing the predental option must take the following courses:

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following sequences Credits: 8

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

or

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 4

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

One of the following Credits: 4

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Additional Credits: 19

Chemistry (B.S.C.)

Program: B.S.C.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

The student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically and computationally.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

-

Chemical literature

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- **Analytical Chemistry**

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

- **Biochemistry**

- Structure, metabolic relationships, and regulation of biomolecules

- **General Chemistry**

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships

-- Elementary computational skills

-- Introductory laboratory skills

- Inorganic Chemistry

-- Chemical bonding and structure

-- Reactivity, reaction mechanisms, and properties

-- Solid state and material science

-- Organometallic chemistry

-- Spectroscopic determination of structure

- Organic Chemistry

-- Chemical bonding and structure including valence bond and molecular orbital theories

-- Reactivity, reaction mechanisms, and properties of the important functional groups

-- Synthesis

-- Spectroscopic determination of structure

-- Material science and bio-organic chemistry

- Physical Chemistry

-- Mathematical and physical principles that underlie modern Chemistry

-- Detailed understanding of the modern microscopic model of the universe

-- The principal topic areas are:

1. Quantum Chemistry

2. Thermodynamics

3. Statistical mechanics

4. Spectroscopy

5. Kinetics

The Bachelor of Science in Chemistry (B.S.C.) program helps you prepare for graduate study in chemistry and chemistry-related careers in industry or government. Providing the best preparation for any career involving chemical research, this program fulfills recommendations of the Committee on Professional Training of the American Chemical Society, and graduates are certified to the ACS as having fulfilled its requirements.

To earn the B.S.C., you must fulfill all requirements for the B.S. with a major in chemistry (listed above) and complete the additional courses listed below.

Degree Requirements

CHM 343 - Inorganic Chemistry Laboratory

Preparation for Course

C: CHM 342.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Additional credits from the following Credits: 3

- CHM - courses numbered 300 and above

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

or other departmentally approved advanced courses in chemical engineering, computer science; geochemistry, surface chemistry, mathematics, molecular biology, physics, and other allied fields

Additional Credits: 17

Biochemistry Option

The Bachelor of Science in Chemistry (B.S.C.) with biochemistry option helps you prepare for graduate study in biochemistry, and for biochemically oriented careers, particularly in the pharmaceutical and health industries. This program fulfills recommendations of the Committee on Professional Training of the American Chemical Society, and graduates are certified to the ACS as having fulfilled the requirements.

To earn the B.S.C. biochemistry option, you must fulfill all requirements for the B.S. with a major in chemistry (listed above) and complete the additional courses listed below.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 534 - Introductory Biochemistry

Continuation of CHM 533 with emphasis on enzymatic catalysis and metabolic transformations.

Preparation for Course

P: CHM 533 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 535 - Biochemistry Laboratory

Laboratory work to accompany CHM 534.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

The following is highly recommended:

CHM 499 - Special Assignments

Undergraduate research. Students will participate in an original research project with a faculty member. Students are required to submit a written report and make a short oral presentation of their research project. May be repeated for credit.

Cr. 1-5

Hours

Lab. 3-15.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Additional Credits: 16-20

Chemistry with Chemistry Teaching Certification (B.S.)

Program: B.S.
Department of Chemistry
College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

The student understands the central concepts, tools of inquiry, and the structure of discipline he or she will teach and can create learning experiences that make these aspects of the subject matter meaningful for his or her students. This includes, but is not limited to:

- Mathematical and quantitative reasoning
- The student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.
- Classical and instrumental laboratory techniques: both analytical and synthetic

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- Individual and collaborative problem-solving

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

- **Chemical literature**

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- Summary of key concepts

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- Analytical Chemistry

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

- General Chemistry

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships
- Elementary computational skills
- Introductory laboratory skills

- Inorganic Chemistry

- Chemical bonding and structure
- Reactivity, reaction mechanisms, and properties
- Solid state and material science

- Organometallic chemistry
- Spectroscopic determination of structure

- Organic Chemistry

- Chemical bonding and structure including valence bond and molecular orbital theories
- Reactivity, reaction mechanisms, and properties of the important functional groups
- Synthesis
- Spectroscopic determination of structure
- Material science and bio-organic chemistry

- Physical Chemistry

- Mathematical and physical principles that underlie modern Chemistry
- Detailed understanding of the modern microscopic model of the universe
- The principal topic areas are:
 - Quantum Chemistry
 - Thermodynamics
 - Statistical mechanics
 - Spectroscopy
 - Kinetics
 - The student understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.
 - The student understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.
 - The student understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
 - The student uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction and active engagement in learning and self-motivation.
 - The student uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
 - The student plans instruction based upon knowledge of subject matter, the community and curriculum goals.
 - The student understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
 - The student is a reflective practitioner who continually evaluates the effects of his or her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.
 - The student fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

To earn the B.S. with a major in chemistry teaching certification, you must fulfill all requirements (listed earlier) for the B.S. with a major in chemistry (except for foreign language, and you must complete ENG W233 as your writing requirement) and satisfactorily complete the courses listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.50 or higher. Each professional education course must be completed with a grade of C or better.

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete an initial set of requirements.

Initial Requirements

- PPST

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

(A grade of A or B is required)

Block 1: Teacher Education (prerequisite: Initial Requirements)

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (prerequisite: Block 1)

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Student Teaching

- EDUC M501 - *Portfolio* Cr. 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area)

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Additional Credits: 37

Civil Engineering (B.S.C.E.)

Program: B.S.C.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve civil engineering problems
- Graduates will demonstrate the ability to design and conduct experiments, interpret and analyze data, and report results
- Graduates will demonstrate the ability to design a civil engineering system, component, or process that meets desired specifications and requirements

- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering software tools and equipment to analyze civil engineering problems and design civil engineering systems
- Graduates will demonstrate an understanding of the professional and ethical responsibility
- Graduates will be able to communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Civil engineers design, construct, manage, and improve the built environment that is all around us. They are involved in all aspects of what makes a community work: the roads, the public transit systems, the freight transit systems, the buildings, the drinking water system, and the waste water/storm water system. They naturally get involved with city or organization planning. IPFW offers state-of-the-art knowledge in all areas of civil engineering such as structures, transportation, geotechnical, construction management, and environmental engineering.

Degree Requirements

To earn the B.S.C.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4) ; you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I-Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II-Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III-The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV-Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V-Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

AREA VI-Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Course Credits: 47

- Credits selected by the department Cr. 19.

CE 210 - Introduction to Geomatics

Basic surveying operations and computations; theories of errors and their analysis; fundamental concepts of horizontal, vertical, and angular measurement; horizontal and vertical control systems; traverse computations; location of man-made structures; use of topographic maps; computation of horizontal and vertical curves.

Preparation for Course

P: ENGR 120, MA 165

Cr. 3.

CE 250 - Statics

Forces and couples, free body diagrams, two- and three-dimensional equilibrium of particle and rigid bodies. Principles of friction, centroids, centers of gravity, and moments of inertia. Virtual work, potential energy, and static stability of equilibrium. Internal forces, shear and bending moment diagrams.

Preparation for Course

P: PHYS 152, MA 261.

Cr. 3.

CE 251 - Dynamics

Kinematics of particles in rectilinear and curvilinear motion. Kinetics of particles, Newton's second law, energy and momentum methods. Systems of particles. Kinematics and plane motion of rigid bodies, forces and accelerations, energy and momentum methods. Introduction to mechanical vibrations.

Preparation for Course

P: CE 250, MA 263.

Cr. 3.

CE 252 - Strength of Materials

Plane stress, plane strain, and stress-strain laws. Applications of stress and deformation analysis to members subjected to centric, torsional, flexural, and combined loading. Introduction to theories of failure, buckling, and energy methods.

Preparation for Course

P: CE 250.

Cr. 3.

CE 315 - Civil Engineering Materials

Study the nature and performance of civil engineering materials and evaluation of their physical and mechanical properties. This course focuses on materials used in construction and maintenance of building and infrastructure such as ferrous and nonferrous metals, aggregates, Portland cement, concrete, masonry, asphalt and asphalt mixtures, wood and composites. Emphasis will be placed on selection criteria, design, applications and proper use of these materials.

Preparation for Course

P: CE 252.

Cr. 3.

CE 316 - Civil Engineering Materials Laboratory

Introduction to civil engineering materials laboratory and design of experiments, with focus on mechanical and physical properties of construction materials; including measurement of strains using mechanical gauges and electrical resistance strain gauges; experiments on metals, aggregates, portland cement, concrete, asphalt and asphalt mixtures, and wood.

Preparation for Course

P: CE 315.

Cr. 1.

CE 318 - Fluid Mechanics

Continuum hypothesis, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis and similitude, Euler and Bernoulli equations, Navier-Stokes equations, viscous flows, boundary-layer flow in channels and around submerged bodies, applications.

Preparation for Course

P: ME 200, CE 251, MA 363.

Cr. 3.

CE 319 - Fluid Mechanics Laboratory

Introduction to fluid mechanics laboratory and design of experiments, including experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, drag forces, boundary-layer studies, falling-ball experiments, and measurements of fluid properties.

Preparation for Course

P: CE 318.

Cr. 1.

CE 330 - Construction Management

Type and functions of management, types of construction, project delivery methods, types of construction contracts, the competitive bidding process, data and project management tools, early and detailed cost estimates, project planning, project scheduling with AOA and AON using the critical path method (CPM), project scheduling with uncertainty using PERT method, resource leveling and allocation, project financing options, project cash flow analysis, computer applications.

Preparation for Course

C: STAT 511.

Cr. 3.

CE 345 - Transportation Engineering

Transportation functions; transportation systems, including land, air, and marine modes; transportation system elements, including traveled way, vehicle, controls, and terminals; techniques of transportation system planning, design, and operation.

Preparation for Course

C: CE 200 or consent of instructor.

Cr. 3.

CE 365 - Environmental Engineering

Introduction to environmental engineering issues, fundamental concepts and applications to mass and energy balance, hydrology, water treatment, water quality management, wastewater treatment, air pollution, hazardous and solid wastes, and their control. Environmental impact statements and global pollution issues.

Preparation for Course

P: CHM 115.

Cr. 3.

CE 375 - Structural Analysis

Stress resultants (reactions, axial forces, shear forces, and bending moments) for beams and framed structures. Deflections of beams and frames by geometric methods (moment-area theorems and applications; conjugate beam analogy). Analysis of statically indeterminate beams and frames by classical stiffness methods; slope deflection and moment distribution. Influence functions and their applications.

Preparation for Course

P: CE 252.

Cr. 3.

CE 376 - Design of Concrete Structures

Flexural analysis and design of reinforced concrete beams including singly and doubly reinforced rectangular beams and T-beams, shear and diagonal tension, serviceability, bond, anchorage and development length, short and slender columns, slabs, footings and retaining walls, including computer applications.

Preparation for Course

P: CE 375.

Cr. 3.

CE 380 - Soil Mechanics

Introduction to the nature and origin of soil and rocks; engineering classification of soil; soil compaction; permeability and seepage, engineering behavior and properties of soils; compressibility; shear strength of soil; lateral earth pressure; and soil-bearing capacity for foundations.

Preparation for Course

P: CE 252, 318.

Cr. 3.

Required Engineering and Mechanical Engineering Courses Credits:
5

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ME 200 - Thermodynamics I

First and second laws, entropy, reversible and irreversible processes, properties of pure substances, applications to engineering problems.

Preparation for Course

C: MA 261.

Cr. 3.

Hours

Class 3,

Mathematics and Science Requirements Credits: 22

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Technical Elective Courses Credits: 12

Civil Engineering

- Courses selected by the department Cr. 36.

CE 379 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 363

Cr. 3.

CE 480 - Finite Element Analysis

Introduction to the fundamentals and the basic concept of the finite-element methods through applications to problems in structures, solid mechanics, fluid mechanics and heat transfer. Emphasis on one and two dimensional problems. Computer implementation.

Preparation for Course

P: CE 318, CE 375.

Cr. 3.

CE 490 - Selected Topics in Civil Engineering

Special topics that cover one or more topics in civil engineering related to structural engineering, environmental engineering, fluid mechanics, hydraulics, hydrology, geotechnical engineering, transportation engineering, pavement analysis and design, materials, and construction engineering and management. May include laboratory experiments if

appropriate. Course may be repeated for credit.

Preparation for Course

P: determined by course offered.

Cr. 1-6.

Variable Title

(V.T.)

CE 570 - Advanced Structural Mechanics

Studies of stress and strain, failure theories, and yield criteria; flexure and torsion theories for solid- and thin-walled members; and energy methods.

Preparation for Course

P: CE 270 or 273.

Cr. 3.

Dual Level Course

Dual-Level, Undergraduate-Graduate

Engineering

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Business

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Mathematics and Sciences

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOL G406 - Introduction to Geochemistry

Applications of solution chemistry, phase diagrams, trace elements, radioactive isotopes, and stable isotopes to the study of the earth. The chemical evolution of earth and the origin of important igneous rocks, chemical sediments, and ore deposits.

Preparation for Course

P: G222, CHM 116, or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G451 - Principles of Hydrogeology

Water resources: occurrence, regulation, and management of water; hydrologic cycle, water movement, well hydraulics; water quality and pollution; surface and subsurface investigations; basin-wide development of water resources; legal aspects; relationship of hydrogeology to engineering geology.

Preparation for Course

P: G334 or consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 128

GPA Requirement

All engineering and technical elective courses must have a combined minimum GPA of 2.0.

Computer Engineering (B.S.Comp.E.)

Program: B.S.Comp.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

The student learning outcomes for the computer engineering degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve computer engineering problems
- Graduates will demonstrate the ability to design, perform, and simulate experiments, to analyze data, and to interpret results
- Graduates will demonstrate the ability to design a computer system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering tools to analyze computer engineering problems
- Graduates will demonstrate an understanding of professional and ethical responsibility
- Graduates will communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Computer engineers design, develop, and manage systems that process, store, and transmit information. These systems include personal computers, workstations, mainframe computers, computer networks, and all of their various components. Computer engineers are particularly involved in the design and development of “embedded” computers used in aircraft, automobiles, communication switching systems, biomedical instruments, industrial robots, and household appliances. Designing these systems raises both hardware and software issues; a computer engineer typically has the hardware background of an electrical engineer and the software background of a computer scientist. Computer engineers can choose to specialize in areas such as very large scale integrated (VLSI) systems design, embedded systems, electronic design automation and networks, and communications. IPFW offers state-of-the-art knowledge in all areas of computer engineering such as computer architecture, software engineering, and robotics.

Degree Requirements

To earn the B.S.Comp.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 49

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

ECE 202 - Linear Circuit Analysis II

Continuation of ECE 201. Use of Laplace Transform techniques to analyze linear circuits with and without initial conditions. Characterization of circuits based upon, impedance, admittance, and transfer function parameters. Determination of frequency response via analysis of poles and zeros in the complex plane. Relationship between the transfer function and the impulse response of a circuit. Use of continuous time convolution to determine time domain responses. Properties and practical uses of resonant circuits and transformers. Input - output characterization of a circuit as a two-port. Low and high-pass filter design.

Preparation for Course

P: ECE 201; C: MA 262.

Cr. 3.

ECE 270 - Introduction to Digital System Design

An introduction to digital system design and hardware engineering, with an emphasis on practical design techniques and circuit implementation.

Cr. 4.

Hours

Class 3, Lab. 3,

ECE 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation, and presentation of experimental results are illustrated. Statistics and design of experiments are emphasized.

Cr. 2.

ECE 301 - Signals and Systems

Description of deterministic signals through the use of Fourier series. Fourier and Z-transforms. Systems description treated by differential and difference equations including transform methods. Computation of system response to both continuous and discrete inputs.

Preparation for Course

P: 202.

Cr. 3.

ECE 302 - Probabilistic Methods in Electrical Engineering

An introductory treatment of probability theory including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and response of linear systems to random inputs.

Preparation for Course

P: MA 363; C: ECE 301..

Cr. 3.

ECE 358 - Introduction to VHDL Programming

Introduction to the design of digital systems using VHDL hardware description language. Emphasis on how to write VHDL that will map readily to hardware. Projects assigned using commercial-grade computer-aided design (CAD) tools for VHDL-based design, VHDL simulation, and synthesis.

Preparation for Course

P: ECE 270, ENGR 122 or 221.

Cr. 3.

ECE 362 - Microprocessor Systems and Interfacing

An introduction to basic computer, organization, microprocessor instruction sets, assembly language programming, the design of various types of digital as well as analog interfaces, and microprocessor system design considerations. The accompanying laboratory is designed to provide practical hands-on experience with microprocessor software applications and interfacing techniques. Topics include design and implementation of a simple microcoded 3-bus computer; a detailed study of a particular microcomputer architecture and instruction set; assembly language programming techniques; system control signals and I/O structure; memory system design; I/O port design and handshaking protocols; interrupt control systems; parallel and serial interface subsystems; counter/timer subsystems; and analog (data and control) interfaces.

Preparation for Course

P: ENGR 110 or equivalent programming experience, EE 266 and 267. P: or C: EE 265.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 368 - Data Structures

Provides insight into the use of data structures. Topics include stacks, queues and lists, trees, graphs, sorting, searching, and hashing.

Preparation for Course

P: 364.

Cr. 3.

ECE 387 - Electronics and System Engineering Through Robotics

Introduction to robotics; micro controllers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, 221, ME 200 or 250.

Cr. 3.

ECE 388 - Electronics and System Engineering Through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical and computer engineering designs.

Preparation for Course

C: ECE 387.

Cr. 1

ECE 405 - Senior Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of electrical/ computer component/system design from concept through final design. Emphasis on teamwork, project management, oral and written communication. General lectures on issues important to the engineering profession, such as professional and ethical responsibility, the impact of engineering solutions in a global and societal context, and other contemporary issues.

Preparation for Course

P: 302 and 362.

Cr. 3.

ECE 406 - Senior Engineering Design II

Design II is an extension of Design I and includes but is not limited to (1) continued research, design, and implementation; (2) oral presentation and/or demonstration of the project to faculty and other interested parties; (3) answering appropriate questions related to the project; (4) generation of a final technical report documenting design, development, and performance of project.

Preparation for Course

P: 405 with a grade of C or better.

Cr. 3.

ECE 437 - Computer Design and Prototyping

An introduction to computer organization and design, including instruction set selection, arithmetic logic unit design, datapath design, control strategies, pipelining, memory hierarchy, and I/O interface design.

Preparation for Course

P: ECE 358, 362.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Embedded Real-Time Operating Systems Cr. 4

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ENGR 222 - Object Oriented Programming

This course will introduce the fundamentals of objected oriented programming in C++. Students should gain understanding of the implementation of overloading, inheritance, polymorphism, and templates. A rudimentary introduction to Java is also included.

Preparation for Course

P: by topic: Proficiency in C programming language; C: ENGR 221.

Cr. 1.

Required Mechanical Engineering Courses Credits: 3

ME 253 - Statics and Dynamics

A shortened combined course in statics, including a study of force systems, free-body diagrams, problems in equilibrium, and mass moment of inertia. Dynamics, including a study of the kinematics and kinetics of particles using force and acceleration, work and energy, and impulse and momentum. Introduction to rigid body kinematics and kinetics using Newton's laws.

Preparation for Course

P: MA 261, PHYS 152.

Cr. 3.

Mathematics and Science Requirements Credits: 22

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 12

Computer Engineering Electives

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or ECE 418 - Introduction to Computer Graphics Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

or ECE 351- Software Engineering Cr. 3

ECE 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ECE 465 - Embedded Microprocessors

Introduction to embedded microprocessors with emphasis on the Intel 80C188EB. Topics include programming and interfacing the memory and I/O, bus systems, and DMA transfers.

Preparation for Course

P: 362

Cr. 3.

- ECE 495X- Wireless and Mobile Communication Systems Credits: 3
- ECE 495Z- Cryptography and Network Security Credits: 3

ECE 547 - Introduction to Computer Communication Networks

A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication and telecommunication networks as they evolve toward the integrated networks of the future employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks, reliability and error recovery, and integrated networks.

Preparation for Course

P: ECE 302 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

Engineering Electives

ECE 311 - Electric and Magnetic Fields

Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

Preparation for Course

P: MA 262 and PHYS 261.

Cr. 3.

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ECE 436 - Digital Signal Processing

Introduction to discrete systems and digital signal processing. Topics include sampling and reconstruction of continuous signals, digital filter design, and frequency analysis including the Fourier transform, the Z transform, the

discrete Fourier transform, and the fast Fourier transform.

Preparation for Course

P: 301.

Cr. 3.

ECE 442 - Transmission of Information

Applications of the principles of signal analysis to amplitude, phase, and frequency modulation systems. Behavior of receivers in the presence of noise. Pulse code modulation and multiplex systems. Emphasis on engineering applications of theory to communication system design.

Preparation for Course

P: 301 and 302.

Cr. 3.

Hours

Class 3,

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and ztransfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

Math and Science Electives

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

MA 418 - Computations Laboratory for MA 417

Implementation on digital computer of those appropriate algorithms created in class to solve mathematical programming problems.

Preparation for Course

P: CS 160 or CS 114; C: or P: 417.

Cr. 1.

Hours

Practice 2.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Total Credits: 128

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Computer Engineering Technology (B.S.)

Program: B.S.

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning objectives for the degree are:

Graduates will have:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of computer engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An an ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.

- A recognition of the need for, and an ability to engage in lifelong learning.
- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.
- A commitment to quality, timeliness, and continuous improvement.

The B.S. in CPET program focuses on applications and application packages in areas of information technology and electronics to support information technology. This can be contrasted with Computer Engineering programs where the focus is on the theory and design of computer-based systems and Computer Science with a focus on computer program design. A graduate of this program will have the training and skills encompassed by a combination of CPET, ECET, CS, and supporting science, mathematics, general education, and other technical areas. CPET courses generally focus on software strongly related to hardware, while ECET courses focus on hardware and related software. A strong feature of the CPET program is the adaptability of the curriculum to concentrate on technical applications similar to those being developed and implemented for use in industry such as: industrial networking, web-based control, electronic devices, web services, and other aspects of enterprise networking. During the latter portion of the B.S. in CPET program, the student also qualifies for an A.S. in EET.

The curriculum described below provides a technical education in the area of industrial and enterprise computer networking. The core provides the student with basic instruction in analog and digital circuit analysis with hands-on laboratory work. It also introduces the fundamentals of computer systems, programming, and applications using word processors, spreadsheets, and high and low-level computer languages. The specialization area provides in-depth knowledge about networking and the requisite hardware and software. Other required courses provide mathematical and communication skills, and sufficient knowledge of the industrial environment to perform effectively in the workplace. The B.S. also enables you to pursue advanced degrees in management, engineering, technology, or computer science.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the degree, you must fulfill the requirements of IPFW (see Part 8) and of the College of Engineering, Technology, and Computer Science (see Part 4); and complete the following courses:

IPFW General Education Requirements

The courses listed below will meet the IPFW General Education Requirements required in the Bachelor of Science in computer engineering technology.

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 7

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

CPET 490 - Senior Design Project I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes, but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) project proposal management, (5) procurement of materials, and (6) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1.

CPET 491 - Senior Design Project II

Phase II includes, but is not limited to (1) continued research and finalized design, (2) project management process, (3) project analysis, design, modeling and prototyping, and testing, (4) oral presentation to faculty and other interested parties, (5) standard-format written technical report.

Preparation for Course

P: CPET 490.

Cr. 2.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Credits:3

Core and Concentration (Major) Courses

CPET 490 and CPET 491 also counted as CPET core courses.

CPET 181 - Computer Operating Systems Basics

Introduction to computer operating systems, organization and functions of hardware components, and system software. Topics include system commands, operating system interface, system utilities, shells programming, file systems and management, introduction to concepts, graphical user interface, device drivers, memory management, processes, concurrency, scheduling, multitasking and multiprocessing. Laboratory experiences include Microsoft Windows and UNIX.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission

media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

CPET 470 - Technology Project Management

Topics include project management concepts, project life cycle; project initiation, team building, planning, review, execution, and tracking and control; project-related issues, resource, cost, subcontractor control, and risk management; Web-based project management and collaboration, project management and integration tools. A portion of the course is devoted to case studies. Written reports and oral presentations required.

Preparation for Course

P: B.S. CPET senior class standing.

Cr. 3.

CPET 490 - Senior Design Project I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes, but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) project proposal management, (5) procurement of materials, and (6) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1.

CPET 491 - Senior Design Project II

Phase II includes, but is not limited to (1) continued research and finalized design, (2) project management process, (3) project analysis, design, modeling and prototyping, and testing, (4) oral presentation to faculty and other interested parties, (5) standard-format written technical report.

Preparation for Course

P: CPET 490.

Cr. 2.

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

ECET 146 - Digital Circuits II

Basic digital system techniques with emphasis on programmable logic and ASIC theory. Computer-aided design is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

P: ECET 111. C: ECET 114 or CS 114.

Cr. 3.

Hours

Class 2, Lab. 2.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 207 - AC Electronics Circuit Analysis

AC circuits including the j operator, phasors, reactance, and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single-phase and three-phase circuits. Computer-aided analysis of circuits is used.

Preparation for Course

P: ECET157 and MA 154.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 296 - Electronic System Fabrication

This course introduces project planning and basic concepts in electronic design automation (EDA). The student develops the project from an engineering rough sketch to a finished and test printed circuit board by utilization of EDA. New construction and testing techniques are introduced. The final product is presented in an oral and written report.

Preparation for Course

P: ECET 204.

Cr. 2-3.

Hours

Class 1, Lab. 2-3.

Required CPET/ECET/CS Elective Courses Credits: 12

At least two courses or 6 of the 12 elective credits must be CPET/ECET courses. Two courses or 6 of the 12 elective credits may be CS courses.

Selected from the following:**CPET 384 - Wide Area Network Design**

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 494 - Java Programming Applications

This course covers design and implementation of modern embedded, stand-alone, Web-based, and distributed Java applications. Topics include definition of classes and objects; Java basics, array and string classes; exceptions and debugging; graphics user interface; file I/O streams; Java multi-threading; Java applets and servlets; Java database connectivity; Java RMI (remote method invocation); Java native interface through C/C++; Java industrial and enterprise applications. Students develop application-oriented final projects.

Preparation for Course

P: ECET 264, CS 160, CS 331, or equivalent, and junior standing.

Cr. 4.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 307 - Analog Network Signal Processing

This is an advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. Transform circuit and signal analysis using Laplace and Fourier techniques are developed, culminating in active filter design applications. Software techniques, such as MATLAB(r) and LabView (tm), to solve mathematical problems are employed.

Preparation for Course

P: ECET 152 or 207 and MA 228.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 346 - Advanced Digital Circuits

Basic system techniques with emphasis on digital ASIC theory. Computer-aided engineering is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

C: 205 and 264.

Cr. 3-4.

Hours

Class 3, Lab. 0-2,

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 382 - C++ Object Oriented Programming for Industrial Applications

This course provides a comprehensive introduction to C++ for students to apply object-oriented programming in industrial applications. A background in C or another high-level language is a must, because all applications in this course involve C and C++. The course introduces the methodology of object identification and behavior, the syntax of C++, and industrial applications.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 393 - Industrial Practice III

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 292.

Cr. 1-5.

ECET 394 - Industrial Practice IV

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 393.

Cr. 1-5.

ECET 395 - Industrial Practice V

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 394.

Cr. 1-5.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSPICE, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 411 - Microcomputer Interfacing

A study of microprocessor interfacing techniques and components required to assemble a typical microcomputer system. Emphasis on serial I/O and parallel I/O chips; peripheral interfacing: LED display, keyboard, CRT display, floppy disk, D/As, and stepping motor.

Preparation for Course

P: ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3.

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, m frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 434 - PC Systems II

Real-time PC-based operating systems. Programming Graphical User Interface in C++. Embedded PC hardware, busses, and peripheral programming. Writing and integrating device drivers.

Preparation for Course

P: ECET 234 and 264 or CS 161.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 466 - Windows Programming for Industrial Applications

This course provides an overview of Windows programming using visual software for industrial applications. The graphic user interface (GUI) in Windows programming allows operators to interact with computers by clicking a mouse on a graphical panel without understanding the program itself. The topics of the course include introduction to the Windows operating system, text input and output, multiple window programs, creating dialog boxes and menus, dynamic data exchange, dynamic link library, and error handling, multimedia programming, designs of graphic control panels for industrial applications such as gages, meters, and setting devices.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Required Computer Sciences Courses Credits: 8**CS 160 - Introduction to Computer Science I**

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

Required Math Courses Credits: 16

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability,

sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required English Technical Writing Courses Credits: 3

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 127

Minor in Computer Science (B.S. CPET) Credits: 20

If you use the two CPET/ECET/CS Electives in the curriculum for two of the courses, you can receive a CS minor by taking only one course not in the curriculum. See your advisor for more information on the forms required to pursue a Minor.

(Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites)

- Approved computer science courses at the 200 level or above Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between

program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

Minor in Mathematics Credits (B.S. CPET): 20

Only one additional Mathematics course (MA 321 or MA 351) is required for a Mathematics Minor beyond the courses required in the curriculum. See your advisor for more information on the forms required to pursue a Minor.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

or

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science (B.A.)

Program: B.A. (in cooperation with the School of Arts and Sciences)

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students who complete the B.A. program in Computer Science should have mastered fundamental concepts in important areas of computing such as data structures and numerical analysis.

Offered within a liberal-arts framework, the Bachelor of Arts program in computer science helps you prepare for graduate studies or a career in computer science.

To earn the B.A. with a major in computer science, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the requirements below. No more than 10 credits with D grades can be applied to the degree. Of the mathematics courses numbered below MA 261, only MA 165, MA 166, and MA 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted.

Students interested in this program should contact the Department of Mathematical Sciences.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- Quantitative reasoning requirement satisfied by the mathematics courses below Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

- Credits in approved two-course sequence in biology, chemistry, geosciences, or physics Credits: 8–10

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

(credits included in Mathematics and Statistics Requirement, below)

School of Arts and Sciences Requirements (29 credits)

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

- Credits in Social and Behavioral Sciences Credits: 3
- Credits in Humanities Credits: 3

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

satisfies the science and mathematics requirement (credits included in Mathematics and Statistics Requirement, below)

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Computer Science Core (32 credits)

- Credits in approved advanced computer science courses at the 300 or 400 level Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general

structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 271 - Computer Architecture

Introduction to computer organization and architecture. Fundamentals of digital logic and representation of numeric and nonnumeric data. Assembly-level organization and programming, including instruction formats, addressing modes, and subprogram call/return. Design of main memory, cache memory, and virtual memory. Interrupt basics, interrupt-driven I/O, DMA, and bus protocols. Processor organization, data paths, the control unit, micriprogramming, pipelining, and performance enhancements. Multiprocessor and alternative architectures.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 350 - Programming Language Design

A survey of language design issues and their implications for translation and run-time support. Examination of modern programming languages and features: Abstract data and control structures, procedures, parameter passing mechanisms, block structuring and scope rules, input/output, concurrent execution, and storage management. Models of run time behavior. Comparison of imperative and declarative programming languages.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

Mathematics and Statistics Requirement (20 credits)

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Free Electives (9–11 credits)

- Credits in approved free electives sufficient to bring total to 124.

Total Credits: 124

Computer Science (B.S.)

Program: B.S.

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.
- An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- An ability to apply design and development principles in the construction of software systems of varying complexity.

This program helps you prepare for a career in computer science and for possible graduate study.

The B.S. program in computer science is accredited by the Computing Accreditation Commission of ABET Inc., 111 Market Place, Suite 150, Baltimore, MD 21202-402, telephone, 410-347-7700. In addition to satisfying the

requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), you must complete the following. Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades will be accepted in other courses.

IPFW General Education Requirements (40 Credits)

Area I—Linguistic and Numerical Foundations (10 Credits)

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences (12 Credits)

Laboratory Science Sequence (8-10 Credits)

One of the following lab science sequences must be taken.

Course Number	Course Title	Credits
BIOL 108/109	Biology of Plants and Biology of Animals	8
BIOL 117/119	Principles of Ecology and Evolution and Principles of Structure and Function	8
CHM 115/116	General Chemistry I and II	8
GEOL G103/G104/G211	Earth Science: Materials and Processes, Earth Science: Evolution of the Earth, and Introduction to Paleobiology	9
PHYS 152/251	Mechanics and Heat, Electricity and Optics	10
PHYS 201/202	General Physics I and II	10
PHYS 218/219	General Physics I and II	8
PHYS 220/221	General Physics I and II	8

Science Elective (3-4 Credits)

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 326 - Heredity: A Human Perspective

Advances in genetics will be examined using diverse topics such as cloning and alteration of human genes and/or embryos, genetic screening, and genetic manipulation of other organisms. Students will gain understanding of basic methods utilized by geneticists and learn to critically analyze published data. Reading the discussions related to ethical, social, political, and economic issues will help assess the impact of current developments in genetics. Research on a selected topic leading to an oral presentation and a term paper will provide opportunities for synthesis. Some hands-on laboratory experience will also be an integral part of this course. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: 100, junior standing, and completion of General Education Area I or instructor's permission.

Cr. 3.

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 302 - Puzzles, Strategy Games, and Problem Solving in the Physical Sciences

This course will explore scientific problem solving by comparing and contrasting it with problem solving in two other domains: puzzles and strategy developing representations, defining the problem, using heuristics, and evaluation solutions. Strategy games will be used as a way to practice problem-solving skills in a domain that can be quickly learned. No credit toward a physics major.

Preparation for Course

P: successful completion of General Education Areas I and II.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society (6 Credits)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (6 Credits)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (3 Credits)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (3 Credits)

See Part 2 General Education Requirements for approved courses

- CS 306 may not be used to fulfill this requirement.

Major Requirements (54 Credits)

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 232 - Introduction to C and Unix

This course is an introduction to the C language and the Unix operating system. It presumes fluency in a high-level language. The course will focus on standard C and Unix tools, rather than a proprietary version of either. C topics include data types, the syntax for arithmetic, logical and relational functions, control functions, scope, communications with the shell, file i/o, pointers, arrays, structs, typedefs, macro and preprocessor functions, and the use of libraries and multiple source files. Unix topics include the file and directory structures, permissions, shells, standard tools such as history, sort, vi, grep, sed, tar, and make, and simple shell scripting.

Preparation for Course

P: CS 161.

Cr. 3.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals,

and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 271 - Computer Architecture

Introduction to computer organization and architecture. Fundamentals of digital logic and representation of numeric and nonnumeric data. Assembly-level organization and programming, including instruction formats, addressing modes, and subprogram call/return. Design of main memory, cache memory, and virtual memory. Interrupt basics, interrupt-driven I/O, DMA, and bus protocols. Processor organization, data paths, the control unit, micriprogramming, pipelining, and performance enhancements. Multiprocessor and alternative architectures.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

CS 350 - Programming Language Design

A survey of language design issues and their implications for translation and run-time support. Examination of modern programming languages and features: Abstract data and control structures, procedures, parameter passing mechanisms, block structuring and scope rules, input/output, concurrent execution, and storage management. Models of run time behavior. Comparison of imperative and declarative programming languages.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 460 - Capstone Design and Professional Practice

Student teams will participate in the design and implementation of a substantial software project. Topics include practical issues of software development, quality assurance, and deployment, as well as computing ethics and professional practice.

Preparation for Course

P: CS 360 and senior standing.

Cr. 4.

CS 472 - Operating Systems Design

The design and implementation of modern multiprocessing operating systems. Topics include concurrent programming, real and virtual storage allocation, resource allocation and deadlock prevention and avoidance, job scheduling, and analytic modeling. Students will complete projects involving concurrency and implement a portion of a multiprocessing operating system.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

Concentration Area (15 Credits)

To satisfy the Concentration Area requirement, at least 9 credit hours must be chosen from one concentration. The 6 remaining credit hours may be distributed among the other concentration areas. With prior written approval from the Department, 3 credit hours may be chosen from CS 492, CS 494 or CS 495.

Software Engineering Concentration

CS 331 - Introduction to C++ and Object-Oriented Programming

An introduction to the C++ language with emphasis on features supporting object-oriented programming. Fundamental data type and operations. Expression evaluation. Selection and iteration constraints. Functions, procedures, and macro. Standard libraries. Classes: declaration and definition; instances; member functions; constructors and destructors; function overloading; inheritance and polymorphism. Stream input and output. Using classes to encapsulate data structure and implementation details.

Preparation for Course

P: CS 260.

Cr. 3.

CS 368 - Human-Computer Interaction

Introduction to general issues surrounding human-computer interaction (HCI). The course presents principles, design methodologies, tools, and evaluation techniques with an emphasis on human-centered interface design and implementation. Other issues covered include HCI aspects of multimedia systems, World Wide Web, computer-supported cooperative work, and recent paradigms of HCI.

Preparation for Course

P: CS 260.

Cr. 3.

CS 467 - Project Management

Covers the techniques required to manage systems development. Topics include project proposal, planning, estimating, organizing, controlling, and completion. Students practice these techniques on a major project using project management software.

Preparation for Course

P: Senior standing either IS or CS and ENG W234.

Cr. 3.

Network Computing Concentration

CS 372 - Web Application Development

Introduction to Web application development. Characteristics of Web and application servers; Web engineering principles and application architectures; Web page construction; client and server-side scripting; database interaction; Web application deployment and management; security and performance issues; overview of application-layer protocols.

Preparation for Course

P: CS 274.

Cr. 3.

CS 374 - Computer Networks

The design and implementation of data communications networks. Topics include network topologies; message, circuit and packet switching; broadcast, satellite and local area networks; routing; the OSI model with emphasis on the network, transport, and session layers.

Preparation for Course

P: CS 274.

Cr. 3.

CS 445 - Computer Security

A survey of the fundamentals of computer security. Topics include risks and vulnerabilities, policy formation, controls and protection methods, survey of malicious logic, database security, encryption, authentication, intrusion detection, network and system security issues, personnel and physical security issues, security design principles, issues of law and privacy.

Preparation for Course

P: CS 260.

Cr. 3.

Informatics Concentration**CS 321 - Introduction to Computer Graphics**

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 380 - Artificial Intelligence

Fundamental concepts and techniques of artificial intelligence. Search techniques, including local search and constraint satisfaction. Knowledge representation concepts and methods of reasoning. Software agents, machine learning and neural networks, and AI planning systems.

Preparation for Course

P: CS 260.

Cr. 3.

CS 421 - Advanced Computer Graphics

Advanced topics in computer graphics such as three-dimensional rendering, curve and surface design, antialiasing, animation, and visualization. Other topics will be selected depending on current research trends. Through development of projects, students will gain practical experience about modern computer graphics.

Preparation for Course

P: CS 321.

Cr. 3.

Theoretical Foundations Concentration

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 474 - Compiler Construction

Techniques for the syntax-directed translation of modern high-level languages. Topics include grammars and language specification, language design issues, lexical analysis, LL and LR parsing techniques, semantics, symbol table design, code generation, and local optimization. Students are required to implement a compiler for a subset of a structured high-level language such as Pascal or Ada.

Preparation for Course

P: CS 350.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

Supporting Courses (16 Credits)

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

or

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Electives (14 Credits)

Approved Electives (11 Credits)

Total Credits: 124

Construction Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.
 - Utilizing modern instruments, methods and techniques to implement construction contracts, documents, and codes.
 - Evaluate materials and methods for construction projects.

- Utilize modern surveying methods for construction layout.
 - Estimate material quantities.
 - Estimate material costs.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employ productivity software to solve problems.
- An ability to conduct. Analyze and interpret experiments and apply experimental results to improve processes.
 - Determine forces and stresses in structural systems.
 - Perform economic analyses related to design, construction, and maintenance.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - Produce design for construction and operations documents utilization.
 - Perform standard analysis and design in one technical specialty in construction.
 - Select appropriate construction materials and practices.
- An ability to function effectively on teams.
 - Participate actively in team activities during and outside class.
- An ability to identify, analyze and solve technical problems.
 - Apply basic concepts to the solution of hydraulic and hydrology problems.
 - Apply basic concepts to the solution of geotechnics problems.
 - Apply basic concepts to the solution of structures problems.
 - Apply basic concepts to the solution of construction scheduling and management.
 - Apply basic concepts to the solution of construction safety problems.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Conduct web and library research and report findings.
- An ability to understand professional, ethical and social responsibilities in construction.
 - Apply principles of construction law and ethics.
 - Perform service learning.
- A respect for diversity and a knowledge of contemporary professional, societal and global issues.
 - Understand societal and global issues.
 - Understand issues of human diversity.
- A commitment to quality, timeliness, and continuous improvement.
 - Produce work of quality and timeliness.
 - Evaluate each course each semester.

Mission

To provide employers and the public of northeast Indiana with educated, technologically equipped graduates, able to serve the varied construction industries (represented by architectural, civil, and construction engineering technologies, and interior design) in advancing the solutions to problems facing the public and private sector.

Goals

- To provide education of the traditional and returning adult student for career success in the construction industry.
- To develop a respect for diversity and a knowledge of contemporary professional, societal, and global issues with an understanding of professional and ethical responsibilities.

- To be responsive to the ever-changing technologies of the construction industries.
- To instill in students the desire for and ability to engage in lifelong learning.

The breadth of the curriculum will provide leadership potential in addressing problems of the region, its people, and its industries.

This program is open to those who have earned an associate degree in architectural engineering technology or civil engineering technology, or the equivalent. Concentrations provide opportunities to prepare you for work in a specific segment of the construction industry. You may choose options in architectural engineering technology, civil engineering technology, or construction engineering technology. Graduates of this program take jobs with contractors, building-materials companies, utilities, architectural firms, engineering firms, and government agencies. The construction engineering technology program does not lead to licensure as a professional engineer or registered architect.

The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone, 410-347-7700. It provides you with problem solving skills, hands-on competency, and required state-of-the-art technical knowledge. Alumni of the department are employed in all areas of the building industry, including construction; architecture; interior design; civil engineering; land surveying; and state, county, and city governments.

To earn the B.S. with a major in construction engineering technology, you must fulfill the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), those for an associate degree in architectural engineering technology or civil engineering technology, and the additional requirements below:

IPFW General Education Requirements

Area II—Natural and Physical Sciences Credits: 4

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

ETCS General Distribution Requirements Credits: 10

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

One of following:

COM 315 - Speech Communication of Technical Information

Open only to students enrolled in technology programs. The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audiovisual materials in such presentations.

Preparation for Course

P: 114.

Cr. 3.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Core and Concentration (Major) Courses Credits: 36

Major Courses

- Technical Selective Credits: 3
(department-approved courses)

ARET 355 - Techniques of Land Utilization

Lectures and projects in land analysis and planning techniques for use in assessment of land development. Subjects will cover building location, grading, drainage, roads, parking requirements, and utilities. Computer application.

Preparation for Course

P: Must be in CNTB program/CNET major.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 381 - Structural Analysis

Techniques in analyzing statistically determinant and indeterminant structures with emphasis on moment-distribution. Standard design procedures for wood and steel structures. Sizing of beams, columns, and connections. Computer applications. Graduation credit requires grade of C or better.

Preparation for Course

P: C or better in CET 283 and MA 227 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 4.

Hours

Class 4.

CET 431 - Properties and Behavior of Soils

Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways. Computer applications.

Preparation for Course

P: GEOL G100, Geol L100; must be in CNTB program/CNET major.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 344 - Constructed Project Quality I

Construction and design quality assurance. The role quality control plays in the execution of the construction contract. Inspection trips to construction sites.

Preparation for Course

P: CNET major; CNET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 348 - Senior Capstone Design Project I

The first term of a two-term comprehensive, capstone design project. Establishment and development of the design process with special emphasis placed on teamwork towards the initial Design Proposal -- written and oral.

Preparation for Course

P: Must be in CNTB program/CNET major, senior standing.

Cr. 3.

CNET 442 - Costs Estimating

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. A study of design and construction cost estimation and cost control practices. Development of unit costs for material and labor. Topics include equipment, subcontracts, risk management, overhead, profit, bid strategy, bid price, total development cost, and value engineering. Use of electronic media and computer applications.

Preparation for Course

P: CNET 280, IET 350, and CNET 344.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 443 - Engineered Construction

Computations for a broad range of design and construction problems such as construction equipment and false-work; winter protection, temporary heat and electrical requirements; humidity, condensation, and equilibrium moisture contents of materials; expansion of materials, structures, curtain walls, and piping; sound absorption and transmission.

Preparation for Course

P: CNET 445.

Cr. 3.

CNET 445 - Construction Project Management I

Planning the organization of people, resources, and activities required for a construction project from inception through design, construction, and operation. Emphasis on time control through critical path scheduling and management-by-exception, and related strategies. Computer applications.

Preparation for Course

P: CNET 344; C: IET 350.

Cr. 3.

CNET 448 - Senior Capstone Design Project II

The second term of a two-term, comprehensive, capstone design project. Multi-interdisciplinary, project-oriented, real-world experience at the cutting edge. Generation and conclusive development of the final design with consideration for design reviews, prototype requirements, scheduling, ergonomics, safety and economic constraints. A written report and oral defense of the project is required.

Preparation for Course

P: CNET 348 and senior standing. Must be in CNTB program/CNET major.

Cr. 3.

CNET 457 - Construction Safety

The study of strategies and technologies in design, construction, and operation for reducing hazards, accidents, injuries, and damage.

Preparation for Course

P: CNET 344; must be in CNTB program/CNET major.

Cr. 3.

Structural Selectives Credits: 3

CET 385 - Fundamentals of Reinforced Concrete

A study of concrete as a construction material and as a structural material. Field methods and practices used in concrete construction. Applied fundamentals of reinforced concrete design as applied to beams, slabs, columns, and footings. Computer applications.

Preparation for Course

P: CET 381 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 3.

or

CET 482 - Steel Structure Design

Applied fundamentals of structural steel design as applied to beams, columns, connections, joists, and detailing.

Preparation for Course

P: CET 381 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 3.

Subtotal Credits: 62

Credits from the A.S. CET or A.S. ARET: 68

Total Credits: 130

Economics (B.A.)

Program: B.A.

College of Arts and Sciences

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

The student learning outcomes for the degree are not available for this degree, contact the program office.

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

To earn the B.A. with a major in economics, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to the following requirements. Correspondence courses, whether from Indiana University or elsewhere, may not be used to satisfy any of the requirements for this major.

IPFW General Education Requirements**Area I—Linguistic and Numerical Foundations****COM 114 - Fundamentals of Speech Communication**

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III: 3

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in ECON) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Economics Core Courses (15 credits)

- ECON E201 - Introduction to Microeconomics Cr. 3.
- ECON E202 - Introduction to Macroeconomics Cr. 3.
- ECON E270 - Introduction to Statistical Theory in Economics and Business I Cr. 3.
- ECON E321 - Intermediate Microeconomic Theory Cr. 3.
- ECON E322 - Intermediate Macroeconomic Theory Cr. 3.
- ECON E406 - Senior Seminar Cr. 3.
- Additional Economics Courses Credits: 9
Additional credits in 300/400-level economics courses or in other courses approved by the economics faculty;
at least two of these courses must be completed at IPFW.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Electrical Engineering (B.S.E.E.)

Program: B.S.E.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the electrical degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve electrical engineering problems
- Graduates will demonstrate the ability to design, perform, and simulate experiments, to analyze data, and to interpret results

- Graduates will demonstrate the ability to design a system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering tools to analyze electrical engineering problems
- Graduates will demonstrate an understanding of professional and ethical responsibility
- Graduates will communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Electrical engineers design, develop, and operate systems that generate and use electrical signals and power. The scope of electrical engineering has expanded tremendously in recent years. It is now the largest branch in engineering, with most graduates employed by manufacturers of electrical and electronic equipment, aircraft, business machines, and scientific equipment. IPFW offers state-of-the-art knowledge in all areas of electrical engineering such as robotics, signal processing, and wireless communications.

To earn the B.S.E.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 48

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

ECE 202 - Linear Circuit Analysis II

Continuation of ECE 201. Use of Laplace Transform techniques to analyze linear circuits with and without initial conditions. Characterization of circuits based upon, impedance, admittance, and transfer function parameters. Determination of frequency response via analysis of poles and zeros in the complex plane. Relationship between the transfer function and the impulse response of a circuit. Use of continuous time convolution to determine time domain responses. Properties and practical uses of resonant circuits and transformers. Input - output characterization of a circuit as a two-port. Low and high-pass filter design.

Preparation for Course

P: ECE 201; C: MA 262.

Cr. 3.

ECE 208 - Election Devices and Design Laboratory

Laboratory experiments in the measurement of electronic device characteristics. Design of biasing networks, small signal amplifiers, and switching circuits.

Preparation for Course

P: 201.

Cr. 1.

Hours

Lab. 3,

ECE 255 - Introduction to Electronic Analysis and Design

Diode, bipolar transistor, and FET circuit models for the design and analysis of electronic circuits. Single and multistage analysis and design; introduction to digital circuits. Computer-aided design calculations, amplifier operating point design, and frequency response of single and multistage amplifiers. High-frequency and low-frequency designs are emphasized.

Preparation for Course

P: 201.

Cr. 3.

Hours

Class 3

ECE 270 - Introduction to Digital System Design

An introduction to digital system design and hardware engineering, with an emphasis on practical design techniques and circuit implementation.

Cr. 4.

Hours

Class 3, Lab. 3,

ECE 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation, and presentation of experimental results are illustrated. Statistics and design of experiments are emphasized.

Cr. 2.

ECE 301 - Signals and Systems

Description of deterministic signals through the use of Fourier series. Fourier and Z-transforms. Systems description treated by differential and difference equations including transform methods. Computation of system response to both continuous and discrete inputs.

Preparation for Course

P: 202.

Cr. 3.

ECE 302 - Probabilistic Methods in Electrical Engineering

An introductory treatment of probability theory including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and response of linear systems to random inputs.

Preparation for Course

P: MA 363; C: ECE 301..

Cr. 3.

ECE 311 - Electric and Magnetic Fields

Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

Preparation for Course

P: MA 262 and PHYS 261.

Cr. 3.

ECE 362 - Microprocessor Systems and Interfacing

An introduction to basic computer, organization, microprocessor instruction sets, assembly language programming, the design of various types of digital as well as analog interfaces, and microprocessor system design considerations. The accompanying laboratory is designed to provide practical hands-on experience with microprocessor software applications and interfacing techniques. Topics include design and implementation of a simple microcoded 3-bus computer; a detailed study of a particular microcomputer architecture and instruction set; assembly language programming techniques; system control signals and I/O structure; memory system design; I/O port design and handshaking protocols; interrupt control systems; parallel and serial interface subsystems; counter/timer subsystems; and analog (data and control) interfaces.

Preparation for Course

P: ENGR 110 or equivalent programming experience, EE 266 and 267. P: or C: EE 265.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ECE 387 - Electronics and System Engineering Through Robotics

Introduction to robotics; micro controllers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, 221, ME 200 or 250.

Cr. 3.

ECE 388 - Electronics and System Engineering Through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical and computer engineering designs.

Preparation for Course

C: ECE 387.

Cr. 1

ECE 405 - Senior Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of electrical/ computer component/system design from concept through final design. Emphasis on teamwork, project management, oral and written communication. General lectures on issues important to the engineering profession, such as professional and ethical responsibility, the impact of engineering solutions in a global and societal context, and other contemporary issues.

Preparation for Course

P: 302 and 362.

Cr. 3.

ECE 406 - Senior Engineering Design II

Design II is an extension of Design I and includes but is not limited to (1) continued research, design, and implementation; (2) oral presentation and/or demonstration of the project to faculty and other interested parties; (3) answering appropriate questions related to the project; (4) generation of a final technical report documenting design, development, and performance of project.

Preparation for Course

P: 405 with a grade of C or better.

Cr. 3.

ECE 436 - Digital Signal Processing

Introduction to discrete systems and digital signal processing. Topics include sampling and reconstruction of continuous signals, digital filter design, and frequency analysis including the Fourier transform, the Z transform, the discrete Fourier transform, and the fast Fourier transform.

Preparation for Course

P: 301.

Cr. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Modern Communications Systems [Credits:3]

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ENGR 222 - Object Oriented Programming

This course will introduce the fundamentals of objected oriented programming in C++. Students should gain understanding of the implementation of overloading, inheritance, polymorphism, and templates. A rudimentary introduction to Java is also included.

Preparation for Course

P: by topic: Proficiency in C programming language; C: ENGR 221.

Cr. 1.

Required Mechanical Engineering Courses Credits: 3**ME 253 - Statics and Dynamics**

A shortened combined course in statics, including a study of force systems, free-body diagrams, problems in equilibrium, and mass moment of inertia. Dynamics, including a study of the kinematics and kinetics of particles using force and acceleration, work and energy, and impulse and momentum. Introduction to rigid body kinematics and kinetics using Newton's laws.

Preparation for Course

P: MA 261, PHYS 152.

Cr. 3.

Mathematics and Science Requirements Credits: 22**MA 166 - Analytic Geometry and Calculus II**

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 9

At least 3 credits must be from the list of electrical engineering electives

Electrical Engineering Electives

ECE 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ECE 460 - Power Electronics

Introduction to power semiconductor devices, their characteristics and ratings. Analysis and design of power electronics circuits are emphasized. Topics include diode rectifiers, controlled rectifiers, a.c. voltage controllers, thyristor commutation techniques, choppers, pulse-width modulated (PWM) and resonant pulse inverters, static switches, and power supplies.

Preparation for Course

P: 301 and 265 or 255 or equivalent.

Cr. 3.

ECE 465 - Embedded Microprocessors

Introduction to embedded microprocessors with emphasis on the Intel 80C188EB. Topics include programming and interfacing the memory and I/O, bus systems, and DMA transfers.

Preparation for Course

P: 362

Cr. 3.

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and ztransfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Embedded Real-Time Operating Systems Cr. 4

- ECE 495Y - RF Circuits Cr. 3
- ECE 495X - Wireless and Mobile Communication Systems Cr. 3

Engineering Electives

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or ECE 418 - Introduction to Computer Graphics Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

or ECE 351 - Software Engineering Cr. 3.

ECE 358 - Introduction to VHDL Programming

Introduction to the design of digital systems using VHDL hardware description language. Emphasis on how to write VHDL that will map readily to hardware. Projects assigned using commercial-grade computer-aided design (CAD) tools for VHDL-based design, VHDL simulation, and synthesis.

Preparation for Course

P: ECE 270, ENGR 122 or 221.

Cr. 3.

ECE 368 - Data Structures

Provides insight into the use of data structures. Topics include stacks, queues and lists, trees, graphs, sorting, searching, and hashing.

Preparation for Course

P: 364.

Cr. 3.

ECE 437 - Computer Design and Prototyping

An introduction to computer organization and design, including instruction set selection, arithmetic logic unit design, datapath design, control strategies, pipelining, memory hierarchy, and I/O interface design.

Preparation for Course

P: ECE 358, 362.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

ECE 495Z - Cryptography and Network Security Credits: 3

ECE 547 - Introduction to Computer Communication Networks

A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication and telecommunication networks as they evolve toward the integrated networks of the future employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks, reliability and error recovery, and integrated networks.

Preparation for Course

P: ECE 302 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Math and Science Electives

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

MA 418 - Computations Laboratory for MA 417

Implementation on digital computer of those appropriate algorithms created in class to solve mathematical programming problems.

Preparation for Course

P: CS 160 or CS 114; C: or P: 417.

Cr. 1.

Hours

Practice 2.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Total Credits: 127

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Electrical Engineering Technology (B.S.)

Program: B.S.

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.

- A commitment to quality, timeliness, and continuous improvement.

The four-year B.S. EET program prepares students for careers in many fields related to engineering, in electronics or computer related industries, manufacturing, engineering sales, or any industry that uses electric power, electronic communications, computer networks, or computer-controlled equipment. The program provides students with advanced study in specialized fields of electronics and computer networking and provides other courses to build a foundation of technical and non-technical knowledge that is essential in modern industry.

The CEIT department also offers the Bachelor of Science with a major in computer engineering technology (CPET), an Associate of Science in EET and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the degree, you must complete the A.S. with a major in electrical engineering technology (see above); fulfill the requirements of IPFW (see Part 8) and of the College of Engineering, Technology, and Computer Science (see Part 4); and complete the following courses:

IPFW General Education Requirements

The courses listed below will meet the IPFW General Education Requirements required in the Bachelor of Science in electrical engineering technology.

Area I—Linguistic and Numerical Foundations Credits: 0 (+9 credits in A.S. Program)

These courses are all required for A.S. degree

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions.

Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3 (+4 Credits in A.S. Program)

PHYS 218 is required for the A.S. degree)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 3 (+3 credits in A.S. Program)

See Part 2 General Education Requirements for approved courses

One Area IV course is taken for the A.S. degree

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

ECET 490 - Senior Design Project, Phase I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Evidence of extensive and thorough laboratory performance is required. Phase I includes but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) procurement of materials, and (5) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1-2.

ECET 491 - Senior Design Project, Phase II

Phase II includes but is not limited to (1) continued research and finalized design, (2) oral presentation to faculty and other interested parties, (3) standard-format written technical report.

Preparation for Course

P: ECET 490.

Cr. 2-5.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Core and Concentration (Major) Courses Credits: 15

ECET 490 and ECET 491 also counted as ECET core courses.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

or

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 307 - Analog Network Signal Processing

This is an advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. Transform circuit and signal analysis using Laplace and Fourier techniques are developed, culminating in active filter design applications. Software techniques, such as MATLAB(r) and LabView (tm), to solve mathematical problems are employed.

Preparation for Course

P: ECET 152 or 207 and MA 228.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 357 - Real-Time Digital Signal Processing

Architecture, instruction set, and hardware and software development tools associated with a fixed-point general purpose DSP VLSI processor are studied. Fundamental principles associated with the processing of discrete time signals are introduced. Common applications such as waveform generation, FIR and IIR digital filtering, and DFT and FFT based spectral analysis and filtering are implemented.

Preparation for Course

P: ECET 264 and 307.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 470 - Technology Project Management

Topics include project management concepts, project life cycle; project initiation, team building, planning, review, execution, and tracking and control; project-related issues, resource, cost, subcontractor control, and risk management; Web-based project management and collaboration; project management and integration tools. A portion of the course is devoted to case studies. Written reports and oral presentations required.

Preparation for Course

P: B.S. CPET senior class standing.

Cr. 3.

ECET 490 - Senior Design Project, Phase I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) procurement of materials, and (5) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1-2.

ECET 491 - Senior Design Project, Phase II

Phase II includes but is not limited to (1) continued research and finalized design, (2) oral presentation to faculty and other interested parties, (3) standard-format written technical report.

Preparation for Course

P: ECET 490.

Cr. 2-5.

Required ECET/CPET elective courses selected from the following
Credits: 12

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

CPET 384 - Wide Area Network Design

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 494 - Java Programming Applications

This course covers design and implementation of modern embedded, stand-alone, Web-based, and distributed Java applications. Topics include definition of classes and objects; Java basics, array and string classes; exceptions and debugging; graphics user interface; file I/O streams; Java multi-threading; Java applets and servlets; Java database connectivity; Java RMI (remote method invocation); Java native interface through C/C++; Java industrial and enterprise applications. Students develop application-oriented final projects.

Preparation for Course

P: ECET 264, CS 160, CS 331, or equivalent, and junior standing.

Cr. 4.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 346 - Advanced Digital Circuits

Basic system techniques with emphasis on digital ASIC theory. Computer-aided engineering is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

C: 205 and 264.

Cr. 3-4.

Hours

Class 3, Lab. 0-2,

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 382 - C++ Object Oriented Programming for Industrial Applications

This course provides a comprehensive introduction to C++ for students to apply object-oriented programming in industrial applications. A background in C or another high-level language is a must, because all applications in this course involve C and C++. The course introduces the methodology of object identification and behavior, the syntax of C++, and industrial applications.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSPICE, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 411 - Microcomputer Interfacing

A study of microprocessor interfacing techniques and components required to assemble a typical microcomputer system. Emphasis on serial I/O and parallel I/O chips; peripheral interfacing: LED display, keyboard, CRT display, floppy disk, D/As, and stepping motor.

Preparation for Course

P: ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3.

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 434 - PC Systems II

Real-time PC-based operating systems. Programming Graphical User Interface in C++. Embedded PC hardware, busses, and peripheral programming. Writing and integrating device drivers.

Preparation for Course

P: ECET 234 and 264 or CS 161.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 435 - Electronic Industrial Controls

Not open to EET students. Familiarization with electronics as applied to industry. Basic theory and application of electronics to controls for industrial equipment and data processing.

Preparation for Course

P: ECET 215, MA 227.

Cr. 3.

ECET 453 - Topics in Telecommunications

An advanced course in telecommunications that introduces and evaluates state-of-the-art systems, services, and applications for current and emerging networking technologies.

Preparation for Course

P: ECET/CPET 355.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 466 - Windows Programming for Industrial Applications

This course provides an overview of Windows programming using visual software for industrial applications. The graphic user interface (GUI) in Windows programming allows operators to interact with computers by clicking a mouse on a graphical panel without understanding the program itself. The topics of the course include introduction to the Windows operating system, text input and output, multiple window programs, creating dialog boxes and menus, dynamic data exchange, dynamic link library, and error handling, multimedia programming, designs of graphic control panels for industrial applications such as gages, meters, and setting devices.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 492 - Digital Systems

A study of difference equations, Z-transforms, sample-and-hold circuits, sampling requirements, digital filters, and control algorithms applied to digital control systems.

Preparation for Course

P: ECET 357.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 499 - Electrical Engineering Technology

Hours and subject matter to be arranged by staff.

Cr. 1-9.

Hours

Class 0-4, Lab. 3-9.

Variable Title

(V.T.)

Notes

Repeatable up to 9 credits

Select Either:

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Select Either:

CPET 375 - Microprocessor-Based Digital Systems

A study of the microprocessor system bus; the architecture and interfacing of various processor, memory, and input-output devices; the instruction set; assembly language programming; and design of microprocessor-based digital network.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3,

ECET 375 - Computer Controlled System Designs

A study of computer-controlled systems using microcontrollers, computer numerical control (CNC), and programmable logic controller (PLC). Topics include microcontroller-based control systems, pneumatic and hydraulic controlled systems, data acquisition, D/A and A/D conversions, ladder diagrams, sampling and reconstruction, Z transform, stability analysis techniques, continuous and discrete time-controlled systems, openloop and closed-loop controlled systems, CNC machines, and mechanical hardware.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3.

Select Either:

CPET 472 - Automatic Control Systems

A study of network analysis using Laplace transforms, classical control systems theory, system stability and compensation, and topics on microprocessor-based control systems.

Preparation for Course

P: CPET 307.

Cr. 4.

Hours

Class 3, Lab. 2,

ECET 472 - Automatic Control Systems

A study of network analysis using Laplace Transforms, classical control systems theory, system stability and compensation, and topics on microprocessor-based control systems.

Preparation for Course

P: ECET 307.

Cr. 4.

Hours

Class 3, Lab. 2.

Select Either:

CPET 486 - Robotics and Control Electronics with Microcomputers

A study of robots, robotic sensors, robotic components, and controlling robots with microcomputers. Topics include sensor-based real-time robot control systems; interfacing the following types of sensors: proximity sensors, force sensors, motion sensors, sound sensors, and vision sensors; low-level data acquisition and communication, high-level communication, coordinate transformation, coordinated path generation, and robot motion programming.

Preparation for Course

P: ECET 114, ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 486 - Robotics and Control Electronics with Microcomputers

A study of robots, robotic sensors, robotic components, and controlling robots with microcomputers. Topics include sensor-based real-time robot control systems; interfacing the following types of sensors: proximity sensors, force sensors, motion sensors, sound sensors, and vision sensors; low-level data acquisition and communication, high-level communication, coordinate transformation, coordinated path generation, and robot motion programming.

Preparation for Course

P: ECET 205.

Cr. 4.

Non-ECET technical elective courses Credits:3

- CS, MET, or IET courses preferred (*credits may also be from co-op or military service*)

Required math courses Credits: 6 (+ 10 credits in A.S. Program)

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required English Technical Writing Course Credits: 3

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 129 (69 in A.S. Program + 60 for B.S.)

Minor in Mathematics Credits: 20

Only two additional courses (CS 160 and MA 175) are required for a Mathematics Minor beyond the courses required in the curriculum. One can be taken as your Non-ECET elective. See your advisor for more information on the forms required to pursue a Minor.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Elementary Education (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in elementary education is intended to prepare students for successful careers as teachers of children in preschool, elementary-primary, and elementary-intermediate classroom settings. The elementary education degree is divided into two concentrations: early childhood, for preschool and elementary-primary school settings, and middle childhood, for elementary-intermediate school settings. Preservice teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in elementary education, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

Early Childhood Concentration

School Settings: Preschool and Elementary-Primary (grades PreK - 3)

General Education Credits: 63

School of Education Credits: 52

Elective Credits: 9

Total Credits: 124

IPFW General Education Requirements Credits: 63

Area I—Linguistic and Numerical Foundations Credits: 18

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(a grade of B or better is required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 12

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Chemistry or Physics Credits: 3
- Geology or Astronomy Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

Area III—The Individual, Culture, and Society Credits: 12

See Part 2 General Education Requirements for approved courses

- American History Credits: 3
- Economics or Political Science Credits: 3
- Sociology or Psychology 120 Credits: 3

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

or

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- Philosophy Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

or

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 9

EDUC M323 - The Teaching of Music in the Elementary Schools

Fundamental procedures of teaching elementary school music, stressing music materials suitable for the first six grades.

Preparation for Course

P: MUS Z241.

Cr. 2.

Notes

Not open to music majors.

EDUC M333 - Art Experiences for the Elementary Teacher

The selection, organization, guidance, and evaluation of art activities, individual and group. Laboratory experiences with materials and methods of presenting projects. Public school participation required.

Preparation for Course

P: FINA T255.

Cr. 2.

FINA T255 - Crafts and Design

Introduction to formal elements of two- and three-dimensional design and how these apply to contemporary crafts. Aesthetic judgment and personal creativity emphasized. Required for elementary education majors. No credit towards a fine arts major.

Cr. 3.

Hours

Studio 6,

Session Indicators

(fall, spring)

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Block 2: Professional Education (P: Block 1)

- T.E.A.M. I

EDUC E339 - Methods of Teaching Language Arts

This course describes and appraises the materials, methods, and techniques employed in an elementary school developmental language arts program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

EDUC P251 - Educational Psychology for Elementary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through pre-adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 3: Professional Education (P: Block 1)

EDUC E325 - Social Studies in the Elementary Schools

Explores the sociological backgrounds of education and surveys subject matter, materials, and methods in the content areas. Public school participation required.

Cr. 3.

EDUC E333 - Inquiry in Mathematics and Science

Focuses on planning and managing appropriate science and math experiences with children who are 3 to 8 years of age. Opportunity for exploring, developing, experimenting, and evaluating instructional materials and their inherent possibilities for children's learning. Planning appropriate inquiry-oriented experiences will be stressed.

Cr. 3.

EDUC E336 - Play as Development

Includes theories and development of play and how it can be guided. Shows how children use play to develop individually; understand the physical, social, and cognitive environment; and develop physical and motor skill and creative ability. Includes a section on the selection and construction of play materials.

Cr. 3.

EDUC E337 - Classroom Learning Environments

This course focuses on the curriculum aspects of early childhood programs designed to meet ethnic and cultural differences and planning, utilizing, and evaluating learning environments. Selection of materials and activities and the acquisition of skills for using these to stimulate children's development are major focuses.

Cr. 3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M425 - Student Teaching: Elementary

Classroom teaching and other activities associated with the work of the full-time elementary classroom teacher. Additional fee.

Cr. 1-16.

Credits: 12

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4 (optional)

(for an additional endorsement area)

Electives Credits: 9

Total Credits: 124

Middle Childhood Concentration

School Settings: Elementary-Intermediate (grades 4-6)

General Education Credits: 63

School of Education Credits: 52

Elective Credits: 9

Total Credits: 124

IPFW General Education Requirements Credits: 63

Area I—Linguistic and Numerical Foundations Credits: 18

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(grade of B or better required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 12

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Chemistry or Physics Credits: 3
- Geology or Astronomy Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Area III—The Individual, Culture, and Society Credits: 12

See Part 2 General Education Requirements for approved courses

- American History Credits: 3
- Economics or Political Science Credits: 3
- Sociology or Psychology 120 Credits: 3

One of the following: Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

or

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- Philosophy Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

or

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 9

EDUC M323 - The Teaching of Music in the Elementary Schools

Fundamental procedures of teaching elementary school music, stressing music materials suitable for the first six grades.

Preparation for Course

P: MUS Z241.

Cr. 2.

Notes

Not open to music majors.

EDUC M333 - Art Experiences for the Elementary Teacher

The selection, organization, guidance, and evaluation of art activities, individual and group. Laboratory experiences with materials and methods of presenting projects. Public school participation required.

Preparation for Course

P: FINA T255.

Cr. 2.

FINA T255 - Crafts and Design

Introduction to formal elements of two- and three-dimensional design and how these apply to contemporary crafts. Aesthetic judgment and personal creativity emphasized. Required for elementary education majors. No credit towards a fine arts major.

Cr. 3.

Hours

Studio 6,

Session Indicators

(fall, spring)

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education**EDUC H340 - Education and American Culture**

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special

groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Block 2: Professional Education (P: Block 1)

- T.E.A.M. I

EDUC E339 - Methods of Teaching Language Arts

This course describes and appraises the materials, methods, and techniques employed in an elementary school developmental language arts program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

EDUC P251 - Educational Psychology for Elementary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through pre-adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 3: Professional Education (P: Block 2)

- T.E.A.M. II

EDUC E325 - Social Studies in the Elementary Schools

Explores the sociological backgrounds of education and surveys subject matter, materials, and methods in the content areas. Public school participation required.

Cr. 3.

Credits: 3

EDUC E328 - Science in the Elementary Schools

Objectives, philosophy, selection, and organization of science materials and methods. Concept development and use of multidimensional materials in science experiments. Analysis of assessment techniques and bibliographical materials. Public school participation required.

Cr. 3.

Credits: 3

EDUC E341 - Methods of Teaching Reading II

This course describes and appraises the materials, methods, and techniques employed in diagnostic and corrective instruction in reading programs. Public school participation required.

Preparation for Course

P: E340.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC N343 - Mathematics in the Elementary School

Emphasizes the developmental nature of mathematical ideas and processes and the role of mathematics in the elementary school curriculum. Public school participation required.

Cr. 3.

Credits: 3

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M425 - Student Teaching: Elementary

Classroom teaching and other activities associated with the work of the full-time elementary classroom teacher. Additional fee.

Cr. 1-16.

Credits: 12

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4 (optional)

(for an additional endorsement area)

Electives Credits: 9

Total Credits: 124

English (B.A.)

Program: B.A.

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- Students display the ability to write critically, precisely, and persuasively, especially about topics relevant to their major field and their selected concentration.
- Students demonstrate the ability to communicate knowledge of literary, linguistics, and rhetorical conventions and traditions, especially those of America and England.
- Students can apply the appropriate research tools and methods to demonstrate critical understanding of their selected concentrations.

To earn the B.A. with a major in English, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and those listed below.

As you complete your degree, you will be required to submit clean copies of two papers to the department. The first paper must be from a course taken during the first 15 credits you count toward the major, and the second from a course taken thereafter and counted toward the major. Both papers should be from courses taught in the department, be appropriate to your concentration, and represent your best work. At least one should be based on research and include documentation. Please turn the paper in before the end of the appropriate semester and include a copy of the assignment, if it is available.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression

See Part 2 General Education Requirements for approved courses

- Credits not in your major discipline: 3

Area VI—Inquiry and Analysis

See Part 2 General Education Requirements for approved courses

- Credits not in your major discipline: 3

College of Arts and Sciences Requirements

English Writing

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

Foreign Language credits: 14

- Requirements in Arts and Sciences Part B

Distribution (not in major discipline) Credits: 9

- Requirements in Arts and Sciences Part C

Cultural Studies Credits: 6

- Requirements in Arts and Sciences Part D

Core and Concentration (Major) Courses

- ENG L202 - Literary Interpretation Cr. 3
- Credits in Writing (ENG W203 or a W-prefixed course above the 200-level): 3
- Credits in American literature: 3
- Credits in British literature before 1700: 3
- Credits in British literature after 1700: 3
- Credits in language study (linguistics, history of the English language, or Old or Middle English literature): 3
- **Credits in one of the concentrations as listed: 15–53**
 - Literature
 - Writing
 - Teacher Certification
 - Language
 - Communication Media

General Elective Courses Credits: 0–32

- Sufficient elective credits, selected in consultation with your advisor

Total Credits: 124

Fine Arts (B.A.)

Program: B.A.

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

The student learning outcomes for the degree are as follows:

- Students will develop fundamental technical skills in 2D and 3D media to successfully express artistic ideas and develop an artistic awareness through visual expression. Students who are interested in the B.A. program

combine advanced General Education study in such areas as anthropology, english, languages, and psychology towards such careers as Art History, Art Management, and Art Therapy.

The Bachelor of Arts degree is designed to enable students to see, formulate, and articulate concepts through the manipulation of form and materials. The art-making practice is through Department of Fine Arts studio concentrations including ceramics, metalsmithing, drawing, painting, printmaking, and sculpture. The B.A. program is a broad-based liberal arts degree which allows students to explore wide-ranging interests in and out of studio art study. Students can choose to concentrate in a specific art discipline, or may explore a wide range of artistic disciplines. The Bachelor of Arts degree is divided into three parts; 33 credit hours of General Studies, 57-69 credit hours of Content Field (Art Studio and Art History classes), and 21-33 credit hours of General Liberal Arts classes. A total of 123 credit hours of study are required for graduation. Students in the Department of Fine Arts B.A. program must maintain a minimum 2.0 cumulative GPA.

Admission to B.A. Program with a Major in Fine Arts

To earn the B.A., you must fulfill the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4). Students within the fine arts B.A. must maintain a minimum 2.0 GPA within the Content Field (see below).

Components	Credits
I. General Education	33
II. Content Field	57-69
III. General Liberal Arts	21-33
Total	123

IPFW General Education Requirements Credits: 33

Area I Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

College of Visual and Performing Arts Requirements**II. Content Field Credits: 57-69**

Students must complete three (3) classes in Art History (9 cr.) plus 36-48 credit hours of studio work to fulfill the Content Field.

100 level Foundation Requirements Credits: 12**FINA P121 - Drawing Fundamentals I-II**

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

(P121 is a pre-requisite to P122)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio should consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level

Fundamentals studio classes. Some students may be asked to re-take certain Foundation classes to attain department standards.

200 Level Studio Requirements Credits: 12

200 Level Studio*

9 cr.

At least one class each from the 2D and 3D area below.

- FINA P223 Figure Drawing (2D)
- FINA P225 Painting Fundamentals (2D)
- FINA P241 Printmaking Fundamentals (2D)
- FINA P231 Sculpture Fundamentals (3D)
- FINA P233 Metalsmithing Fundamentals (3D)
- FINA P235 Ceramics Fundamentals (3D)

plus

- VCD P273 Computer Art and Design 3 cr.

*Additional 200 level Fundamentals classes beyond the four required can be used in the B.A. Advanced Studio area listed below.

Petition into the B.F. A. Program

Students may petition the Department of Fine Arts to enter the (Bachelor of Fine Arts) B.F.A. program after taking all of the above 200 level Fundamental classes. Candidates for the B.F.A. program will be asked to fill out an application, present a portfolio for review (see below) of seven (7) 200 level studio classes, and be part of an interview with Department of Fine Arts faculty. Judgment will be made based on the above criteria and a review of grades.

Art History Requirements Credits: 9

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(H111 and H112 must be taken in the first four semesters of study)

One additional FINA 300 or 400 level Art History class.

Advanced Studio Courses Credits: 24-36

Studio Electives

At least eight (8) but no more than twelve (12) studio classes can be taken at the Advanced Studio level. At least two classes must be taken at the 300 level in each area of concentration before 400 level classes. 400 level classes can be repeated to meet credit requirements. Of the total credit hours in this category, up to four (4) studio classes can be taken from the Department of Visual Communications and Design (VCD) unless permission from your advisor is given to include more. Advanced studio classes should be selected in consultation with the Chair of the Department of Fine Arts.

III. General Liberal Arts Courses Credits: 21-33

A minimum of seven (7) but no more than eleven (11) liberal arts courses are needed to fulfill the B.A. requirements. Liberal Arts classes are defined as any IPFW class counted towards a degree (does not include remedial courses). An option of pursuing a minor in an outside field is encouraged within these credits.

Total Credits: 123

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Fine Arts faculty. For a review of transferred studio credit, the student should provide the reviewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

Fine Arts (B.F.A.)

Program: B.F.A.

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

The student learning outcomes for the degree are as follows:

- Students within the Bachelor of Fine Arts program will acquire the technical virtuosity to be successful as professional artists. Many students who seek a B.F.A. degree have aspirations towards graduate studies in a Masters of Fine Arts (M.F.A.) degree leading to careers such as professorship positions, corporate commissions, gallery ownership, museum curatorships, art criticism, and independent studio careers.

The Bachelor of Fine Arts program is designed for exceptional students who are interested in pursuing a professional career in the field of fine arts. They must have demonstrated superior quality and motivation in a particular studio art discipline. Students within the B.F.A. program can concentrate in ceramics, drawing, metal-smithing, painting, printmaking, or sculpture. Department of Fine Arts students who wish to attain a B.F.A. start in the B.A. program, then petition for formal entrance into the B.F.A. program after the completion of 200-level studio requirements. The Bachelor of Fine Arts degree is divided into two parts; 33 credit hours of General Education classes, and 90 credit hours of art history and studio classes. All B.F.A. students must maintain a 2.5 cumulative G.P.A. and a 3.0 G.P.A. within the Content Field courses (studio and art history) of the B.F.A. program. A total of 123 credit hours of study are required for graduation.

Admission

Students must meet the requirements of IPFW (see Part 8)

Components:	Credits
I. General Education	33
II. Content Field	90
Total	123

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement.)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement.)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

College of Visual and Performing Arts Requirements

II. Content Field Credits: 90

Students must complete a minimum of 75 credit hours in studio and 15 credit hours in FINA art history classes for the B.F.A.

100 Level Foundation Courses Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

(P121 is a prerequisite to P122)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio should consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level Fundamentals studio classes. Some students may be asked to re-take certain Foundation classes to attain department standards.

Art History Course Requirements Credits: 15

- 3 additional FINA 300 or 400 level Art History classes. Classes must have FINA prefix.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(H111 and H112 must be taken in the first four semesters of study)

200-Level Course Requirements Credits: 21

FINA P223 - Figure Drawing I

Introduction to drawing the human figure using various media and techniques. Basic anatomy; the skeletal and muscular structure of the human figure as related to drawing is included.

Cr. 3.

FINA P225 - Painting Fundamentals I

Introduction to painting methods and media and the further application of basic principles of composition through varied pictorial problems from still life, landscape, memory, and imagination.

Cr. 3.

FINA P231 - Sculpture Fundamentals

Student will work in a wide variety of sculptural mediums. Assignments will focus on idea-based expression as well as a thorough introduction to different tools and processes of sculptural construction. Projects will allow student expression within a guideline that explores natural and abstract images.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P233 - Metalsmithing Fundamentals

Understanding of the possibilities of the materials and an appreciation of the use of the tools essential for the creation of forms and objects in metal. Basic techniques, raising, planishing, casting, forging, and fabrication are taught. Inventiveness within the discipline imposed by this traditional art form is encouraged.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P235 - Ceramics Fundamentals

Fundamental techniques of forming by hand-building methods, glazing and firing clay objects. Introduction to the creative possibilities of this craft through projects in tile, pottery form, and sculpture. Emphasis on self-expression through good design and understanding the medium.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P241 - Printmaking Fundamentals

Study of materials, tools, processes in the various methods of printmaking (block printing, lithography, and intaglio) as they are used for contemporary graphic concerns.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

B.F.A. Portfolio Review

Each student must submit a portfolio of 200 level work to attain formal acceptance into the B.F.A. program. Each petitioning student must apply to present their work through the Department of Fine Arts office in the semester in which they complete all seven 200 level Fundamentals classes. Each student applying for acceptance into the B.F.A. program will declare their area of studio concentration, i.e., painting, sculpture, with the understanding that areas of art can be interdisciplinary and flexible. The portfolio should consist of 15-20 works, with at least two works from each 200 level Fundamentals course. Consideration of work will be given in accordance to each student's intended concentration area, i.e., printmaking majors should be able to show strong drawing skills. It is highly recommended that students seek faculty advice, especially from faculty whose area students are intending to apply, on which works to submit for review. Faculty evaluations will be based on a student's strong knowledge and skills in:

- Showing competence in representational drawing of volume, pictorial space, and the depiction of the human figure. An understanding of linear perspective should be evident.
- The ability to compose aesthetic element of line, tone/value, shape, texture, color, and 3D form in space.
- Demonstrating technical and aesthetic excellence (for the 60 credit level) in your chosen major; i.e. drawing, ceramics, metalsmithing, painting, printmaking, or sculpture.
- (for 2D majors) drawing, painting, printmaking as well as the demonstration of competence and serious investigation in 3D media.
- (for 3D majors) ceramics, metalsmithing, and sculpture with competence and serious investigation in 2D media.

B.F.A. Portfolio Review Outcome

A student applying for acceptance in the B.F.A. program may be accepted, deferred, or denied. A student's acceptance into the B.f.a. will allow them to advance into 300 level studio classes as a declared B.F.A. major. A deferred student will be asked to re-submit their portfolio for B.F.A. consideration after re-taking requested classes. A student denied entry into the B.F.a. program may wish to continue in the B.A. program or apply once again for entry into the B.F.A. program with permission from the department.

300/400-Level Concentration Courses Credits: 21

- Complete seven classes in declared Concentration Area. Some of these classes might be closely related such as painting and printmaking or sculpture and ceramics. Two 300 level classes must be taken before any 400 level classes in a given area. 400 level classes can be repeated to meet Concentration area requirements.

200/300/400 Electives Courses Credits: 15

- Complete five courses in elective classes. Classes can be either FINA or VCD. Usually these are classes outside the Concentration Area.

Senior Project Requirements Credits: 6

Senior Project

The Senior Project is a two-semester course during the senior year. Students must be signed into these classes by the Chair of the Department of Fine Arts. During this year, students' work will be critiqued by at least three faculty. Each student will be asked to partake in discussions of other student's work during the critiques. Students will also be asked to be part of seminars, attend visiting artists' lectures and demonstrations, visit exhibitions, and present and express ideas about their art work to other seniors. Students must also work closely with a full-time department faculty member as an advisor in their Concentration area. Evaluations of senior work will be based on the following criteria:

- Body of original and ambitious work
- Evidence of depth of thought
- Evidence of research
- Sufficient technical virtuosity
- Ability to explain ideas
- Participation in all departmental senior events
- Professional attitude
- Keeping abreast of new developments in the field as they pertain to your work

B.F.A. Senior Project Documents

Students are required to complete two written documents each semester of the Senior Project year.

- The Senior Projection document should be ready for department faculty by the beginning of their first semester of Senior Project. It should address the ideas they plan on dealing with and developing for the senior year. The quantity of work can be negotiated with the faculty.
- The Self Critique document will be required at the end of each semester as a critical self evaluation of a student's senior project experience. The critique should include ideas about the project and how it helped clarify their artistic direction.

B.F.A. Exhibition

At the end of the second Senior Project semester, the student must exhibit for graduation. The Department of Fine Arts Senior Exhibition will be at the end of the spring semester of each school year. Students can expect to work with the College of Visual and Performing Arts public relations specialist and gallery coordinator on publication materials and arrangements for their senior exhibition.

Total Credits: 123

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Department of Fine Arts faculty. For a review of transferred studio credit, the student should provide the viewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic

probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

French (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

French is the language of many fascinating countries and cultures in Africa, parts of Asia, Europe, and North America. French-speaking countries influence many fields of study, such as the arts, philosophy, politics and world economy, science, and technology. With a major in French and a degree, in particular a B.A., you may continue your education in languages or expand into other fields at a graduate school, or you may pursue a career in business or teaching.

To earn the B.A. with a major in French, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the requirements of the major, given below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in FREN) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)
- Foreign Language

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

or

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

Additional Foreign Language Requirements

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills.

Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

Distribution (not in FREN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in 300-level French literature courses Credits: 6
- Credits in 300-level French language courses, excluding F325 Oral French for Teachers Credits: *6-9
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3
- Additional credits in 400-level French courses Credits: *9-12

**The combined total of 300-level French language courses and 400-level French courses must be at least 18 credits.*

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

French with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification
Department of International Language and Culture Studies
College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a French major for the B.A. with teacher certification must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the requirements of the major, given below.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in FREN) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements (25–29 credits)

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)
- Foreign Language (10–14 credits)

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

or

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

Additional Foreign Language Requirements

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

Distribution (not in FREN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in 300-level French language courses Credits: 6
- Credits in 300-level French literature courses Credits: 6
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3
- Additional credits in 400-level French courses Credits: 9

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124.

Total Credits: 124-130

General Studies (B.G.S.)

Program: B.G.S.

Division of Continuing Studies

Kettler Hall 144 ~ 260-481-6828 ~ www.ipfw.edu/dcs/gsdp

The student learning outcomes for the degree are as follows:

- Speak and write precisely, clearly, and persuasively.
- Formulate arguments in a variety of contexts.
- Assess their own arguments and compare and evaluate them with the arguments of others.
- Understand the nature and diversity of individuals, organizations, cultures, and societies.
- Demonstrate understanding of scholarly approaches to such abiding questions as the meaning of life, the role of the arts and humanities, social and behavioral sciences, and sciences and mathematics in understanding what being human means, and the limits of knowledge.
- Apply their knowledge in written, oral communication, or technical competencies.
- Gather, evaluate, select, organize, and synthesize material in order to complete a research or creative project.
- Apply the knowledge gained across interdisciplinary boundaries.

General Studies offers a wide variety of personalized degree options to the traditional and nontraditional student. Students may individually tailor their program to combine a substantial core of courses basic to a traditional university education and study in career-related areas. Within the flexible framework of degree requirements, students may design an undergraduate program that can more readily meet their career and personal-development goals than can a traditional major. Students will be encouraged and assisted in developing a unique academic program complementing their individual interests, abilities, and intellectual and practical concerns.

In addition to taking advantage of the wide variety of daytime, evening, and weekend classes at IPFW, students may choose to earn credit toward their degree through correspondence study. Students may also earn credit by examination,

and in some cases earn credit for significant, documentable self-acquired competencies when the learning outcomes have been comparable to those of university-level work. Consideration is given to all previously earned college credit from other accredited institutions. The Associate of Arts in General Studies and Bachelor of General Studies programs may also be tailored to the needs of those unable to study on campus during regularly scheduled periods. Both degrees may be completed online.

Both programs include courses in broad categories called required areas of learning (listed below) and elective credit that students may earn in any IPFW program. The required areas of learning provide broad exposure to the humanities, social sciences, and sciences, while the electives permit students to explore areas of interest, receive credit for prior university-level experiential learning, and tailor the degree to their individual needs. In each plan of study, students must demonstrate competency in each of the following areas: written communication (two courses), oral communication, mathematics, computer literacy, and a diversity course.

After students are admitted to a general studies degree program, students will develop a plan of study to meet their objectives. An advisor will provide assistance in this effort. For further information, refer to the current Indiana University School of Continuing Studies *General Studies Degree Bulletin*.

To earn a B.G.S., students must complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Required Areas of Learning

General studies is a university-wide degree program, certified through Indiana University's School of Continuing Studies. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities Credits: 0-6

(depending upon course selection for general education)

Afro-American Studies

Foreign Language

Classical Studies

History

Communication

Journalism

Comparative Literature

Music

English (except R150 and W130)

Philosophy

Film

Religion

Fine Arts

Theatre

Folklore

Visual Communication and Design

Science and Mathematics Credits: 3-9

(depending upon course selection for general education)

- ANTH B200 and E445 (only)
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K214, K215, and K216)
- ECON E270 (only)
- Entomology
- *ETCS 106
- Forestry and Natural Resources
- GEOG G107, G109, G315 (only)
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- PSY 120, 201, 310, 314, 329, and 416 (only)
- SOC S351 (only)
- SPEA K300 (only)
- Statistics

*required course

Social and Behavior Sciences Credits: 6-12

(depending upon course selection for general education)

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA J101 (only)
- WOST W210 (only)

Required Core and Concentration (Major) Credits: 54

- 12 credits in each required area of learning, including courses from at least two departments in each area Credits: 36
- 18 credits in one of the three required areas of learning Credits: 18

General Elective Courses Credits: 66

In consultation with an advisor, you are urged to concentrate electives in related departments (15 credits in arts and sciences are required).

Note

Students must complete at least 20 of these credits after admission to the program. No more than 21 credits in a single arts and sciences department/subject area or 30 credits in a single professional school area may be counted. A minimum of 30 credits must be taken at the 300–400 level. At least 30 credits must be taken within the IU system or as a Purdue student at IPFW. No more than 30 credits toward the BGS may be awarded for successful completion of external exams such as CLEP. Students admitted to the BGS program as of Fall 2008 or subsequent semesters may not apply more than 64 credits from a community college toward the completion of the requirements for the BGS degree.

Total Credits: 120

Geology (B.A.)

Program: B.A.

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

The student learning outcomes for the degree are as follows:

- Acquisition of a central core of geological knowledge
- Ability to review and evaluate geologic research
- Ability to synthesize and integrate interconnectedness among geological subdisciplines
- Proficiency in ancillary sciences applied to geology
- Ability to apply simple mathematical solutions to quantifiable problems
- Ability to draw inferences about geological phenomena not encountered in course work
- Empowerment to become agents of change

To earn the B.A. with a major in geology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete required geoscience courses with grades of C or better.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

One of the following: Credits: 0

(credits included in Major Courses, below)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

With L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GEOL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Science Part B Credits: 14

Distribution

One of following Credits: 4-6

- Credits in social and behavioral sciences Credits: 3
- Credits in humanities Credits: 3

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

GEOG G237 - Cartography and Geographic Information

Use of computers in the management of geographic information, including data storage, database construction, creation and production of maps and related representation of geographic data. Computer cartography laboratory, experimentation and interactive experience using GIS and mapping software.

Cr. 3.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G323 - Structural Geology

Nature and origin of structural features of the earth's crust, with emphasis on mechanics of deformation, and graphic and mathematical solution of structural problems. Two lectures and one laboratory per week plus a four-day field trip. Eligible for graduate credit.

Preparation for Course

C: GEOL G222 or written consent of instructor; physics, engineering, or mathematics majors admitted with GEOL G100 or G103 and PHYS 201 (or equivalent).

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3-4

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

All courses require GEOL L100 - General Geology Laboratory Cr. 1-2.
(with the exception of GEOL G103)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Geology (B.S.G.)

Program: B.S.G.

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

The student learning outcomes for the degree are as follows:

- Acquisition of a central core of geological and environmental knowledge
- Ability to review and evaluate geologic and environmental knowledge
- Ability to synthesize and integrate interconnectedness among geological and related disciplines
- Proficiency in ancillary sciences applied to geology
- Ability to apply appropriate mathematical solutions to quantifiable problems
- Ability to draw inferences about phenomena not encountered in course work
- Ability to solve field problems
- Ability to read, write, and give oral presentations of technical papers
- Ability to develop and apply multiple working hypotheses to environmental and geological problems
- Empowerment for advanced study in graduate school or for employment in technical and non-technical fields, possibly as a professional geologist

To earn the B.S.G., you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and complete required courses in geoscience and ancillary subject areas with grades of C or better.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

Credits included in Core Courses, below

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

One of following Credits: 0

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

With L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GEOL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Credits in the first year of a modern foreign language Credits: 8

Core and Concentration (Major) Courses

- Credits in a STAT or CS course approved by your advisor Credits: 3

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with

emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G319 - Elementary Field Geology

Geologic field methods. Section measurement, geologic mapping, construction of geologic cross-sections, and use of geologic surveying instruments. Class spends 10-14 days in upper peninsula of Michigan, near Marquette.

Preparation for Course

P: G222; C: G334 or consent of instructor.

Cr. 2.

Hours

Class 1, Field 10-14 days,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G323 - Structural Geology

Nature and origin of structural features of the earth's crust, with emphasis on mechanics of deformation, and graphic and mathematical solution of structural problems. Two lectures and one laboratory per week plus a four-day field trip. Eligible for graduate credit.

Preparation for Course

C: GEOL G222 or written consent of instructor; physics, engineering, or mathematics majors admitted with GEOL G100 or G103 and PHYS 201 (or equivalent).

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.
and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of following Credits: 3-4

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
with GEOL L100 (4 credits)

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

with GEOL L100 (4 credits)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

Option Requirements

- Credits in the Environmental Geology Option or Geology Option Credits: 15–18 (see below)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Environmental Geology Option

This option will help you prepare for advanced study in environmental geology or for work as a professional geologist in the areas of water supply, waste management, geological hazards, and engineering geology.

12 credits from the following:

- Additional credits in 300- or 400-level geology courses Credits: 3

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G406 - Introduction to Geochemistry

Applications of solution chemistry, phase diagrams, trace elements, radioactive isotopes, and stable isotopes to the study of the earth. The chemical evolution of earth and the origin of important igneous rocks, chemical sediments, and ore deposits.

Preparation for Course

P: G222, CHM 116, or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

GEOL G451 - Principles of Hydrogeology

Water resources: occurrence, regulation, and management of water; hydrologic cycle, water movement, well hydraulics; water quality and pollution; surface and subsurface investigations; basin-wide development of water resources; legal aspects; relationship of hydrogeology to engineering geology.

Preparation for Course

P: G334 or consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Total Credits: 15

Geology Option

This is the traditional option in geology. It will help you prepare for advanced study in geology or work as a professional geologist.

Option Requirements

- Field camp experience (e.g., GEOL G429) Credits: 6–7
- Credits in 400-level geology courses Credits: 8
- Additional credits in 300- or 400-level geology courses Credits: 3

Total Credits: 17-18

German (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

To earn the B.A. with a major in German, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the requirements of the major, given below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GER) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

- (requirement is satisfied by ILCS I300, listed below)
- **Foreign Language**

One of the following:

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

or

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

Additional Foreign Language Requirements

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

Distribution (not in GER)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in German culture, normally G362, G363, G463, or G464 Credits: 3
- Credits in 300-level German literature courses Credits: 3
- Additional credits in German at the 300 level Credits: 3
- Credits in 400-level German courses (language, literature, and/or culture) Credits: 9
- GER G318 - German Language Skills I Credits: 3
- ILCS I300 - Methods of Research and Criticism Credits: 3
- ILCS I330 - Cultural Crossroads: Comparative International Cultures Credits: 3

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

German with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a B.A. in German with teacher certification must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the following requirements.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundation

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition

sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing.

Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GER) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Foreign Language

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

One of following Credits: 4-8

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

Distribution (not in GER)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in German culture, normally G362, G363, G463, or G464 Credits: 3
- Credits in 300-level German literature courses Credits: 3
- Additional German credits at the 300 level Credits: 3
- Credits in 400-level German courses (language, literature, and/or culture) Credits: 12

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice

for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,
Variable Title
(V.T.)
Notes
May be repeated.

Block II

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.
Hours
Lab. 0-3,
Variable Title
(V.T.)
Notes
May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course
P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.
Hours
Lab. 0-3,
Variable Title
(V.T.)
Notes
May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public

school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124.

Total Credits: 124

History (B.A.)

Program: B.A.
Department of History
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

The student learning outcomes for the degree are as follows:

- Possess broad knowledge and some specialized understanding of the diverse historical pasts of America, Europe, and the World;
- Understand the basic scientific and humanistic methodology of history as an intellectual discipline including the direct experience of evaluating primary sources and secondary literature;
- Demonstrate the ability to read, analyze, and write about historic topics;
- Recognize historical analyses of human experience as the basic outlook of modern culture; and
- Be equipped to continue historical studies throughout life.

To earn the B.A. with a major in history, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and those listed below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in HIST) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

HIST H217 - The Nature of History

An introductory examination of (1) what history is, (2) types of historical interpretation, (3) common problems of historians, and (4) the uses of history.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.

(If you have satisfied the second writing course requirement with another approved course prior to becoming a history major at IPFW, the requirement of HIST H217 will be waived.)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in HIST)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in non-Western culture: Cr. 3
- HIST H113 - History of Western Civilization I Cr. 0

(credits included in Major Courses, below)

Core and Concentration (Major) Courses

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST J495 - Proseminar for History Majors

Selected topics of history. May be repeated for credit with a different topic.

Preparation for Course

P: H217 or equivalent.

Cr. 3.

Variable Title

(V.T.)

- Credits in upper-level American history Cr. 6.
- Credits in upper-level Western European history* Cr. 6.
- Credits in upper-level Other World history* Cr. 6.
- Additional credits in history (H217 excluded) Cr. 3.

*HIST H232 may not be used to fulfill the Western European or Other World requirements, but may be used for additional credit toward the major or minor.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

History Honors Degree (B.A.)

Program: B.A. Honors
Department of History
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

The student learning outcomes for the degree are as follows:

- Possess broad knowledge and some specialized understanding of the diverse historical pasts of America, Europe, and the World.
- Understand the basic scientific and humanistic methodology of history as an intellectual discipline including the direct experience of evaluating primary sources and secondary literature.
- Demonstrate the ability to read, analyze, and write about historic topics.
- Recognize historical analyses of human experience as the basic outlook of modern culture.
- Be equipped to continue historical studies throughout life.

As an entering student, you become eligible for this honors program by scoring above 600 on the SAT I verbal test or the CEEB history achievement test; thereafter, you must have a GPA of 3.25 or higher or be recommended by a member of the department for admission. Admission to the degree program requires that you submit a written petition to the department no later than the end of your junior year.

Completion of the program requires, in addition to fulfillment of the B.A. requirements,

- a GPA of 3.3 or higher in history and a cumulative GPA of 3.25 or higher
- 9 credits of honors courses, including 6 in history
- satisfactory completion in HIST K499 of an honors thesis
- satisfactory defense of the honors thesis.

Hospitality Management (B.S.) (Fall 2009)

Program: B.S.
Department of Consumer and Family Sciences
College of Health and Human Services

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

The student learning outcomes for the degree are as follows:

Graduates will demonstrate:

- Mastery of core skills and competencies that underpin Hospitality Management.
- Ability to use a broad knowledge base that informs judgment and choices in business and personal situations.
- Integration and application of hospitality management knowledge to professional situations.
- The ability to make informed choices within dynamic professional situations that respect ethical principals.
- Application of their role as a leader in promoting ethical behavior in a business environment.
- Application of the value, role, and responsibility of the hospitality industry in a community.
- The ability to evaluate complex issues and problems in the hospitality industry using critical thinking and problem solving skills.
- Effective and professional communication in a business environment with staff, superiors, customers, and members of the community using written, oral, and multimedia technology.

Effective Spring 2010 the requirements for this degree will change, see B.S. 2010.

Men and women with leadership ability are in great demand for managerial and administrative positions in the rapidly expanding hospitality industry. The number of available management positions in the industry continues to exceed the number of hospitality graduates each year. Students from this program assume responsibilities for managerial proficiency at various levels and for providing services in the multitude of situations where people eat, travel, or live away from home.

To earn the B.S., you must satisfy the requirements of IPFW (see Part 8), earn a grade of C or better in each required ENG, HTM, and FNN course, and complete the following requirements:

IPFW General Education Requirements Credits: 30

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society: 6

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

CFS General Distribution Requirements Credits: 9

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Business Core Credits: 9**BUS A201 - Principles of Financial Accounting**

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Organizational Leadership and Supervision Core Credits: 9

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 476 - Compensation Planning and Management

A technical course in how to plan and implement a total compensation system, including practical experience in job analysis and description, job evaluation, salary survey and analysis, and the development of a structured pay policy. Includes environmental study of behavioral implications and legal environment.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

Hospitality Management Core Credits: 47

FNN 203 - Foods Selection and Preparation

Scientific principles and techniques in food preparation.

Cr. 3.

Hours

Class 2, Lab. 3,

Notes

Credit not given for both FNN 203 and 205.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

HTM 100 - Introduction to the Hospitality and Tourism Industry

An overview of supervisory careers, opportunities, and responsibilities in the food service, lodging, and tourism industry including historical developments, pioneers, and industry leaders; representatives or companies from the three areas.

Cr. 1-3.

3 Cr. Hr. required

HTM 181 - Lodging Management

Organization, management and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of the lodging industry will be discussed. Typically offered Fall, Spring.

Preparation for Course

P: HTM 141.

Cr. 3.

HTM 191 - Sanitation and Health in Foodservice, Lodging, and Tourism

Food safety and other health-related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification examination to receive credit.

Cr. 3.

HTM 212 - Organization and Management in the Hospitality and Tourism Industry

Basic principles of planning, organizing, directing, and controlling human and physical resources will be addressed. Students will also learn how these principles can be applied to maximize the organizational effectiveness of hospitality and tourism businesses.

Preparation for Course

P: Classification 3 or higher.

Cr. 3.

HTM 231 - Hospitality and Tourism Marketing

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are described and evaluated, including packing, the travel trade, advertising, sales promotion, merchandising, and personal selling.

Preparation for Course

P: HTM 141, 181 and HTM 203.

Cr. 3.

HTM 251 - Computers in the Hospitality Industry

Establishes computer competency with the DOS operating system, spreadsheet, and word processing. Explores applications of computers in the hotel and food service industry with emphasis on programs that impact the management of hospitality organizations.

Preparation for Course

P: HTM major or consent of instructor.

Cr. 3.

HTM 291 - Quantity Food Production and Service

An introduction to food preparation methods and service techniques in quantity food settings. Students become familiar with ingredients and culinary terminology, and learn to read and evaluate menus. Recipe conversion and costing skills are developed. Different production schemes and product flow are examined, and the relationship between back-of-the-house and front-of-the-house activities is discussed.

Preparation for Course

C: HTM 291L.

Cr. 3.

HTM 291L - Quantity Food Production and Service Labs

Basic knowledge of foodservice operations. Students learn and develop food production and service skills in the RHIT Cafe and the John Purdue Room. Students are exposed to quantity cooking methods, the use and care of equipment, and service techniques as they rotate through various positions commonly found in foodservice operations. All aspects of dining are experienced by students.

Preparation for Course

C: 291.

Cr. 2.

HTM 301 - Hospitality and Tourism Industry Practicum

Training and practical experience at the entry level, totaling at least 300 hours in an approved hospitality or tourism operation.

Preparation for Course

P: 6 credits in HTM or consent of program coordinator.

Cr. 1.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

2 Cr. Hr. required

HTM 312 - Human Resources Management for the Service Industries

The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: Analysis and design of work, recruiting, selection, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies. Typically offered Fall, Spring.

Preparation for Course

P: classification 3 or higher.

Cr. 3.

HTM 371 - Introduction to Tourism

Principles, practices, and philosophies that affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

Preparation for Course

P: HTM 181 and 203.

Cr. 3.

HTM 411 - Hospitality and Tourism Law

Rights and duties of innkeepers, food operators, and tourism organizations. Topics include civil rights, contracts, negotiable instruments.

Cr. 3.

HTM 491 - Beverage Management

Principles and practices regarding the production, selection, purchasing, storage, and service of beverage alcohol in the hospitality industry. Certification in a Responsible Beverage Service Course is required to earn course credit.

Preparation for Course

P: must be a minimum of 21 years of age and HTM major.

Cr. 2.

HTM 492 - Advanced Foodservice Management

Utilize managerial skills and techniques with planning, organizing, directing, and controlling a full-service restaurant operation. Management teams of two to three students develop, market, and operate an international theme restaurant that is open to the public. Emphasis is placed on utilizing effective management skills to create a high-quality,

profitable operation with well planned systems and highly motivated, organized employees.

Preparation for Course

P: 212, 291, 291L, 341, and 491.

Cr. 4.

Hospitality Electives Credits: 21

CFS 399 - Special Issues

I. A multidisciplinary overview of aging. Issues focused on biopsychosocial health and communication patterns relative to successful aging. II. Multidisciplinary course that emphasizes participatory skill of the student in the area of gerontology. Community agencies and services are utilized in this course.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Regularly offered as Issues of Aging I–II Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

HTM 311 - Procurement Management for Foodservice

Identifies and describes food, supplies, and related merchandise used in the foodservice industry. Provides methods and criteria for recognizing quality, evaluating, specifying, purchasing, and inspecting these products. Discusses the use of technology in the purchasing component of the foodservice industry.

Preparation for Course

P: HTM 291, 291L.

Cr. 3.

HTM 314 - Franchising

The study of franchise administration, operations, and marketing, with a special emphasis on hospitality-related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

Cr. 3.

HTM 315 - Club Management and Operations

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

Preparation for Course

P: HTM 231.

Cr. 3.

HTM 316 - Casino Management

An overview of the development, operations, and management of casino enterprises. Includes the evolution of gaming, regulatory statutes and agencies, operational concerns, marketing strategies, financial controls, security/surveillance requirements, ethical considerations, and the economic/social impact on the community. Field trip required.

Preparation for Course

P: All students must be 21 years of age.

Cr. 3.

HTM 321 - Equipment for Restaurants, Hotels, and Institutions

Principles of selection, operation, and maintenance of food service equipment including materials, structural details, design, cost, performance, and specification standards.

Preparation for Course

P: 291 and 291L.

Cr. 3.

HTM 322 - Hospitality Facilities Management

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

Preparation for Course

P: HTM 181.

Cr. 3.

HTM 323 - Foodservice Layout and Design

Arrangement of foodservice equipment for efficient use of space. An introduction to computer-aided design for equipment placement within space constraints. Development of work-flow patterns and human engineering considerations.

Preparation for Course

P: 291, 291L, and 321.

Cr. 3.

HTM 341 - Cost Controls in Foodservice and Lodging

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

Preparation for Course

P: BUS A201, HTM 312.

Cr. 3.

HTM 383 - Resort, Cruise, and Entertainment Operations

This class provides a comprehensive analysis of the operations of different styles of resorts, as well as cruise lines, gaming, and other entertainment attractions. Operating structures, systems, and management practices are compared with traditional hotels. The resort development process is explained and alternative resort concepts are discussed, including resort condominium and vacation/interval ownership.

Preparation for Course

P: 181 or consent of instructor.

Cr. 3.

HTM 391 - Specialty Foodservice and Catering

Exploration and creative use of specialty foods and unusual cuisine for the hospitality field. Concepts of management for the effective operation of quantity specialty food service organized in a financial framework involving menu-planning, customer relations, and production-service logistics.

Preparation for Course

P: 291 and 291L.

Cr. 3.

Hours

Class 1, Lab. 6,

OLS 378 - Labor Relations

An introduction to labor relations and the organization of labor unions and federations. Certification, contracts, collective bargaining, grievances, and arbitration are covered. Applicable labor legislation and court decisions are also discussed.

Preparation for Course

P: 376 or instructor permission.

Cr. 3.

Total Credits: 125

Hospitality Management (B.S.) (2010)

**Program: B.S.
Department of Consumer and Family Sciences
College of Health and Human Services**

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

The BS - Hospitality Management studies are designed to offer students the opportunity to learn and develop the skills and competencies they will need to become successful leaders and entrepreneurs in one of the world's fastest growing industries.

To apply for the BS Hospitality Management, students must meet IPFW degree seeking requirements and complete the prerequisite courses outlined in the Pre-Hospitality Management (Pre-HM) requirements, earning 30 credits and attain a cumulative GPA of 2.0 or higher.

General Program Requirements:

Successfully complete 124 credits in the prescribed Pre-HM and HM Program.

- **Attain a cumulative IPFW GPA of 2.0 or above.**
- Complete HM courses with a cumulative GPA of 2.2 or above.
- Complete all the HM degree requirements within 8 years of first registration into the HM program.
- Abide by the rules and regulations specified in the Bulletin, requirements for degrees (see part 8) and the College of Health and Human Services (see part 4) in effect at the time of admission. In addition students enrolled in the BS hospitality Management are required to follow the CFS student handbook regulations in effect which are available on line at: <http://www.ipfw.edu/cfs/assets/pdf/Student%20Handbook.pdf>

Pre-Hospitality Management (Pre-HM) Requirements:

Students applying for the BS hospitality Management must submit as part of their application, proof of work experience with an HTM Work Experience Portfolio. The purpose of the work experience is for students to be in a position to demonstrate a suitable work ethic and customer care that indicates a potential to work in the hospitality industry. This work experience is non-credit bearing.

Pre-HM courses are mostly prescribed with the exception of some General Education area II and area IV courses. Prescribed Pre-HM courses include all Gen Ed I, III and V areas as well as the HTM 100, Introduction to Hospitality and Tourism Management. Pre-HM required courses are chosen to establish a sound foundation in English language, mathematical skills adapted to business as well as particularly important scientific areas on which HM Major courses build.

Hospitality Management Major, Requirements

To progress from Pre-Hospitality Management (Pre-HM) and gain admission in the Hospitality Management Major, students must: successfully complete 30 credits in the prescribed Pre-HM courses and attain a cumulative GPA of 2.00 as well as present with their application the Work Experience Portfolio described above. Admission to the HM Major is not limited, applications are reviewed by the department faculty.

Once admitted, students follow a prescribed progression in their second and third year. The fourth year of the program offers students opportunities to choose amongst HM electives and/or special areas of interest and an HR specialization.

To graduate, a student admitted to the HM major must complete the required courses as listed below in the chronological order thus completing all HM level 2 before starting HM level 3 and hence forth completing all HM level 3 before starting HM level 4 courses while also respecting the co- and prerequisites.

Pre-Hospitality Management Requirements

To apply for the Hospitality Management Bachelor of Science program, students must meet IPFW degree seeking requirements and complete the prerequisite course outlined hereunder earning 30 credits and attain a cumulative GPA of 2.0 or higher.

IPFW General Education Requirements Credits: 30

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II - Natural and Physical Sciences - Credits: 6

See Part II General Education Requirements for approved courses - Cr. 3

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area III - The Individual, Culture and Society - Credits: 6

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV - Humanistic Thought - Credit: 6

See Part II General Education Requirements for Approved Courses - Cr. 3

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

Area V - Creative and Artistic Expression - Credits: 3

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Pre - Hospitality Management - Pre-HM Courses

Includes General Education Requirement courses: 1 course from Area 2 and 1 course from Area 4 - Cr. 6

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

HTM 100 - Introduction to the Hospitality and Tourism Industry

An overview of supervisory careers, opportunities, and responsibilities in the food service, lodging, and tourism industry including historical developments, pioneers, and industry leaders; representatives or companies from the three areas.

Cr. 1-3.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hospitality Management Major Required Courses

HM Level 2:

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FNN 203 - Foods Selection and Preparation

Scientific principles and techniques in food preparation.

Cr. 3.

Hours

Class 2, Lab. 3,

Notes

Credit not given for both FNN 203 and 205.

FNN 204 - Food, History & Culture

Food, History & Culture is designed to examine the fundamental tenets that govern human behavior around food choices and foodways. symbolic value and meaning of food will be looked at. the relationship of food cultures to consumer behavior will be scrutinized. Study in this course will explore the historical development of the current food cultures in Europe, Asia, Africa, the Middle East and the Americas. Study in this course will also explore the impact of foodways and food choices on nutritional status and health.

Cr. 3.

HTM 181 - Lodging Management

Organization, management and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of the lodging industry will be discussed. Typically offered Fall, Spring.

Preparation for Course

P: HTM 141.

Cr. 3.

HTM 141 - Financial Accounting for the Service Industries

Fundamental accounting principles and procedures applied to the hospitality and service industries. Includes study of the uniform system of accounts, financial statements, special purpose journals, and subsidiary ledgers unique to the hospitality and service industries.

Cr. 3.

HTM 191 - Sanitation and Health in Foodservice, Lodging, and Tourism

Food safety and other health-related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification examination to receive credit.

Cr. 3.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 4

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

One of the following credits: 4

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

HM Level 3:

OLS 376 may be replaced by HTM 312

FNN 304 - Nutrition's Place in Hospitality

This course focuses on fundamental nutrition for the student's personal and professional life. Needs for, functions of, and food sources of nutrients will be covered. Emphasis in this course will be on food habits, trends, and factors affecting selection of foods, and how this relates and can be used in menu planning and evaluation of personal use and in the food service/culinary industry. Emphasis in this course is on nutrition topics pertinent to the food service/culinary industry.

Preparation for Course

P: FNN 204.

Cr. 3.

HTM 231 - Hospitality and Tourism Marketing

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are described and evaluated, including packing, the travel trade, advertising, sales promotion, merchandising, and personal selling.

Preparation for Course

P: HTM 141, 181 and HTM 203.

Cr. 3.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

HTM 310 - Food and Beverage Operation Management

This course will allow students to understand restaurant and food service business models and master the essential principals of managing successful food and beverage operations. In a balanced approach of theory and practice students will learn to develop food and beverage production and service skills and understand the choices and opportunities available in this field. a special focus is placed on marketing, planning, cost control and guest satisfaction as well as developing the right ambiance and attitude that contributes to successful food preparation and service in a restaurant setting.

Preparation for Course

P: HTM 210.

Cr. 3.

HTM 312 - Human Resources Management for the Service Industries

The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: Analysis and design of work, recruiting, selection, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies. Typically offered Fall, Spring.

Preparation for Course

P: classification 3 or higher.

Cr. 3.

HTM 322 - Hospitality Facilities Management

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

Preparation for Course

P: HTM 181.

Cr. 3.

HTM 371 - Introduction to Tourism

Principles, practices, and philosophies that affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

Preparation for Course

P: HTM 181 and 203.

Cr. 3.

One of the following credits: 3

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following credits: 3

FREN F204 - Second-Year French II**Preparation for Course**

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

HM Level 4:

Two additional courses required for Level 4. Student must see advisor.

HTM 410 - Dinner Series, Capstone

Capstone Food and Beverage operation course where students will utilize managerial skills and techniques such as but not limited to: planning, organizing, directing, and controlling a fine dining experience. In this course students will: develop, manage, market, and operate a fine dining experience that is open to the public. Emphasis is placed on creating an event that is appreciated by guests by utilizing effective management skills to create a high quality, profitable operation with well planned systems and highly motivated, organization employees.

Preparation for Course

P: HTM 310.

Cr. 3.

Hours

Class 1, Lab. 1.5.

HTM 411 - Hospitality and Tourism Law

Rights and duties of innkeepers, food operators, and tourism organizations. Topics include civil rights, contracts, negotiable instruments.

Cr. 3.

HTM 430 - Hospitality Strategic Management

The purpose of this course is to understand the use and effects of strategic management at various levels of implementation such as personal, business and political in as far as they can positively affect a person's life and

business success. To achieve this we will put in practice management skills and knowledge together with personal skills in both practical and reflective situations. This is a dynamic process that will prepare you and develop life long learning skills in areas such as formulating and implementing strategic management.

Preparation for Course

P: HTM 181, 310, 322 and HTM 441.

Cr. 3.

HTM 491 - Beverage Management

Principles and practices regarding the production, selection, purchasing, storage, and service of beverage alcohol in the hospitality industry. Certification in a Responsible Beverage Service Course is required to earn course credit.

Preparation for Course

P: must be a minimum of 21 years of age and HTM major.

Cr. 2.

One of the following credits: 3

FREN F326 - French in the Business World

Study of the language of business activities in France, with an introduction to the structure and functioning of various aspects of French economic life. Useful for students preparing for the proficiency examinations of the Chambre de Commerce de Paris.

Preparation for Course

P: FREN F204 (or equivalent).

Cr. 3.

GER G315 - Business German

Improvement of speaking, writing, listening, and reading skills. Concentration on the language of the German business world. Discussion, grammar, exercises, and letter writing. Conducted in German.

Preparation for Course

P: GER G204 (or equivalent).

Cr. 3.

SPAN S315 - Spanish in the Business World

Introduction to the technical language of the business world with emphasis on problems of style, composition, and translation in the context of Hispanic moracutes.

Preparation for Course

P: SPAN S275.

Cr. 2-3.

One more Foreign Language Class to be determined.

Hospitality Management Major Elective Courses

In addition to the prescribed courses the student must complete 18 credit hours in elective hours. The BS Hospitality Management requires a student to either take 9 HM credits from the list hereunder or 3 HM +9 credits in a specialization field as per the list hereunder. The remainder of the electives may be freely chosen within IPFW courses with respect to the rules that apply to these courses.

HTM Electives:

CFS 399 - Special Issues

I. A multidisciplinary overview of aging. Issues focused on biopsychosocial health and communication patterns relative to successful aging. II. Multidisciplinary course that emphasizes participatory skill of the student in the area of gerontology. Community agencies and services are utilized in this course.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Regularly offered as Issues of Aging I–II Cr. 3.

FNN 403 - Advanced Nutrition: Food from Farm to Fork

This course explores processes involved in the transformation of food as a raw commodity on the farm to a consumable item at the "table." Literally, to study food from farm to fork. This course reviews local, regional, and global food supply systems; industrial as well as non-industrial. Historical perspective is included with comparisons of current and past food supply chains. Study encompasses traceability of food and food sustainability as well as regional and seasonal factors affecting the food supply chain. Included is study of the food supply chain, food availability, and how these influence consumer behavior including food preparation and consumption. The impact of the food supply system on communities, family dynamics, nutritional status, and health is also included.

Preparation for Course

P: FNN 304.

Cr. 3.

HTM 314 - Franchising

The study of franchise administration, operations, and marketing, with a special emphasis on hospitality-related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

Cr. 3.

HTM 315 - Club Management and Operations

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

Preparation for Course

P: HTM 231.

Cr. 3.

HTM 341 - Cost Controls in Foodservice and Lodging

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

Preparation for Course

P: BUS A201, HTM 312.

Cr. 3.

HTM 383 - Resort, Cruise, and Entertainment Operations

This class provides a comprehensive analysis of the operations of different styles of resorts, as well as cruise lines, gaming, and other entertainment attractions. Operating structures, systems, and management practices are compared with traditional hotels. The resort development process is explained and alternative resort concepts are discussed, including resort condominium and vacation/interval ownership.

Preparation for Course

P: 181 or consent of instructor.

Cr. 3.

HTM 420 - Event Management

The first half of this course focuses on preparing students for the exciting world of event planning. Through class discussions, case studies, service learning and projects. This course will teach students to plan and execute special events with flair and without any unexpected surprises or expenses. Students will leave the class armed with practical advice on every aspect of organizing and managing special events. Students will gain hands on experience through individual service learning projects. The second half of this course is dedicated to walking students through the steps to begin their own event planning business. We will discuss all aspects of creating a small event planning business from legal structures, naming a company, insurance, pricing, bidding and bookkeeping. Students will be required to write a business plan for their own event planning business as the final.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

HR Specialization Electives:

OLS 342 - Interviewing Strategies in Organizations

A study of the various interviews supervisors conduct in organizational settings. This course focuses on general interviewing principles as well as specific types of interviews including selection, information gathering, disciplinary, and performance appraisals.

Preparation for Course

P: OLS 252 and COM 114

Cr. 3.

OLS 378 - Labor Relations

An introduction to labor relations and the organization of labor unions and federations. Certification, contracts, collective bargaining, grievances, and arbitration are covered. Applicable labor legislation and court decisions are also discussed.

Preparation for Course

P: 376 or instructor permission.

Cr. 3.

OLS 468 - Personnel Law

A consideration of personnel law, including EEO, pensions, wage contracts and payments, worker's compensation and insurance, and other statutes, as well as labor laws and arbitration.

Preparation for Course

P: 268 and 376; junior or senior class standing.

Cr. 3.

OLS 476 - Compensation Planning and Management

A technical course in how to plan and implement a total compensation system, including practical experience in job analysis and description, job evaluation, salary survey and analysis, and the development of a structured pay policy. Includes environmental study of behavioral implications and legal environment.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

OLS 479 - Staffing Organizations

An applications-oriented study of key concepts in staffing organizations, including principles and issues in conducting job analysis, preparing job descriptions/specifications, and screening/selecting employees. Special emphasis on the design, validation, and operation of high-volume staffing systems.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

Organization Communication Specialization:**COM 212 - Approaches to the Study of Interpersonal Communication**

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 320 - Small Group Communication

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups. Focus on the roles, networks, and messages employed by small group communicators.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

Total Credits: 124

Human Services Bachelor of Science (B.S.)

Program: B.S. degree
Department of Human Services
College of Health and Human Services

Neff Hall 130 ~ 260-481-6424 ~ www.ipfw.edu/hs/

The student learning outcomes for the degree are as follows:

- Students will understand basic concepts of a variety of helping theories.
- Students will have an enhanced knowledge of basic helping skills.
- Students will achieve knowledge of organizational functioning through experience in community agencies/treatment facilities.
- Students will be able to write clear, objective and concise reports.
- Students will examine their values and begin a process of personal awareness.
- Students will know the ethical standards for human service workers.
- Students will recognize the need for continued learning and professional development.

The Bachelor of Science in Human Services is a degree that requires a total of 125 semester credit hours. The program is designed to prepare students to become human service professionals who can meet the needs of clients and communities within a diverse society. Examples of job roles that graduates of the degree would be qualified to fill include group home supervisor, substance abuse prevention educator, case manager, social service agency staff/manager, and psychiatric rehabilitation worker/supervisor, among others.

Call the Human Services office at 260-481-6424 for additional information and to be assigned an advisor.

Admission

To gain entry into this program, you must meet all of the requirements for admission to IPFW and comply with internship agency requirements for internship placements. Students should contact the Department of Human Services at 260-481-6424 for more information and to be assigned an advisor.

Human Services Admission Requirements **(Effective January 1, 2010)**

- Admission to the Human Services Program is by application only. See the HSRV website for an application. (<http://www.ipfw.edu/hs/>)
- Applicants must have completed the following prerequisite courses with a C or better:
 - HSRV 100
 - HSRV 103
 - HSRV 105
 - PSY 120
 - SOC 161
 - ENG 131
 - COM 114
 - ETCS 106
- Applicants must have a 2.5 or higher on a 4.0 scale to qualify for admission.
- Applicants will be required to complete a background check at their own expense and demonstrate meeting the College of Health and Human Services Technical Standards as part of the application process.
- Veterans must submit a copy of their discharge papers.

Internships

Students in the human services program will complete two years of internships during their academic career. The first is completed during the sophomore year and the second is conducted during the senior year. Students should consult with their academic advisor regarding internship opportunities.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

Must complete the following courses with a grade of C or better.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

Must complete the following courses with a grade of C or better.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Philosophy elective Cr. 3

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

Must complete the following courses with a grade of C or better.

See Part 2 General Education Requirements for approved courses

- Psychology elective Cr. 3.
- Sociology elective Cr. 3

Human Services Core Credits: 32

Must complete the following courses with a grade of C or better.

HSRV 100 - Introduction to Human Services

An orientation to human services. History, current concepts, ethics, and roles of the various workers in the field are discussed. This course is open to non-HSRV majors.

Cr. 3.

HSRV 103 - Helping Relationship Techniques

This course will provide students with opportunities to increase their effectiveness in helping people. This course will examine the helping process in terms of skills, helping relationship. This course is appropriate for anyone who is entering a career dealing with people. This course is open to non-HSRV majors.

Cr. 3.

HSRV 105 - Basic Interviewing Skills

This course is designed to introduce and develop skills associated with interviewing clients. The focus will be on skill-building and competencies in attending behaviors, client observation skills, open and closed questions, encourager skills, paraphrasing and summarizing, and reflection of feelings and meaning. Advanced interviewing skills will include confrontation, probes, focusing, and information giving. This course is open to non-HSRV majors.

Cr. 3.

HSRV 200 - Behavioral Therapies

This course will cover major theories, terms, and techniques of behavioral therapeutic approaches. It will explore a broad range of intervention strategies with application appropriate for diverse problems. the course will critically examine how these techniques can be adapted in different cultures where different interpersonal dynamics and values may exist.

Cr. 3.

HSRV 201 - Clinical in Case Study Method I

This is the first of two courses which will provide the student with field opportunities in an approved field instruction site that provides structured learning opportunities for the student to demonstrate human services foundational knowledge, professional standards, and practice competencies required of an entry-level human services worker. An agency supervisor and a faculty member supervise students as they complete the required 160 hours of field work. The

classroom component relates theory and principles of practice to agency field-study experience. Through group interaction, discussion, and analysis, students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients.

Preparation for Course

P: HSRV 200.

Cr. 2.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

HSRV 251 - Clinical in Case Study Method II

This is the second of two courses which will provide the student with field opportunities in an approved field instruction site that provides structured learning opportunities for the student to demonstrate human services foundational knowledge, professional standards, and practice competencies required of an entry-level human services worker. An agency supervisor and a faculty member supervise students as they complete the required 160 hours of field work. The classroom component relates theory and principles of practice to agency field-study experience. Through group interaction, discussion, and analysis, students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients.

Preparation for Course

P: HSRV 201.

Cr. 2.

HSRV 315 - Introduction to Theories and Therapies

Discusses specific theories and therapies that are essential for human service professional practice. This course also provides knowledge that is required to pass the Indiana certification examination for addiction counselors.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 320 - Case Methods

This course will provide theoretical knowledge of techniques in case management related to human service clients and agencies. Case management with a wide range of populations will be discussed.

Preparation for Course

P: 100, 105.

Cr. 3.

HSRV 330 - Psychopharmacology for Human Services

An overview of the effects and side effects of psychiatric medications. Focus of the course will be knowledge useful in identifying 1) whether or not a client is responding to pharmacological treatment and 2) client behaviors indicating adverse effects of medication that should be reported to the client's healthcare provider.

Preparation for Course

P: PSY 350.

Cr. 1.

HSRV 400 - Internship I

This course will provide experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of case management skills including intake, client assessment, and development and implementation of intervention plans. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 315, 320; P or C: 401.

Cr. 1-4.

(Fall only)

HSRV 401 - Internship Seminar I

This course will focus on professionalism, ethical issues, and social welfare policy as applied with human service clients and agencies. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

C: HSRV 400.

Cr. 1.

(Fall only)

HSRV 450 - Internship II

This course will provide advanced experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of program evaluation, legal implications related to human service practice, and management issues related to directing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 451.

Cr. 2-4.

(Spring only)

HSRV 451 - Internship Seminar II

This course will provide a forum for discussion of advanced theories and skills applicable to developing, assessing, and managing human service agencies. Topics will include program evaluation, legal implications related to human service practice, and management issues related to implementing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 450.

Cr. 1.

(Spring only)

Required supporting courses Credits: 33

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(Grade of C or better)

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

(Grade of C or better for the following courses.)

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S352 - Methods of Social Research

Introduction to methods of sociological research. Topics covered include qualitative and quantitative research methods, research design and implementation, experiments, survey research techniques, field research techniques, data collection, data analysis, and the ethical concerns of social research.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

(Fall only)

And

Two Sociology electives - one 300/400 level Cr. 6.

Choose from the following Credits: 3

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

Choose from the following Credits: 3

Course must be completed with a grade of C or better.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

(Either PSY 235 or PSY 369 may be taken for credit, NOT BOTH)

Choose from the following Credits: 3

Course must be completed with a grade of C or better.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Human Service Concentration Credits: 24

Student works with advisor to identify a group of courses from human services and related disciplines that support a concentration in such areas as addictions, psychiatric rehabilitation, gerontology, child/adolescent services, activity/recreational therapies, and developmental disabilities. These courses prepare students to graduate with knowledge and skills directly applicable to their chosen area of interest within the human services profession.

Students' must complete 12 credits in concentration Area A and 12 credits in concentration Area B. See your academic advisor for approval of your chosen concentration areas and for approval of courses under each concentration area.

Concentration Area A (12 CR.)

Students will choose a concentration in one of the following areas: Business and Administration, Communications and Public Relations, Computers and Technology, Divinity, Early childhood Education, Ecology, Ethics, Ethics and Cultural Studies, Homeless, International Studies, Marketing and Fundraising, Medical and Healthcare, Missionary Work, Peace Studies, Political Science, Professional Writing, Public Affairs, Sign Language, Teaching English as a New Language or Women's Studies.

Concentration Area B (12 CR.)

Students will choose a concentration in one of the following areas: Adolescents, Children, Disabled and Special Needs, Diversity, Domestic Violence and Gender Roles, Family, Health and Well Being, Justice System, Leadership and Management, Gerontology, Spanish, or Substance Abuse.

Industrial Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and

Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
 - Technical expertise in quality, meteorology, advanced SPC, SQC, TQM, ISO standards, and design of experiments.
 - Technical expertise in ergonomics, work methods design, optimization, engineering economy, and cost estimating.
 - Technical expertise in facilities layout, production planning and control, queuing theory, modeling, and simulation.
 - Technical expertise in CAD, engineering graphics, GD&T, gage capability studies, and measurement uncertainty.
 - Technical expertise in materials, manufacturing processes, design for manufacturing and assembly, and CNC machining.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively.
 - An ability to communicate effectively through oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues related to the profession.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, technical, analytical, and managerial skills necessary to develop, implement, and improve integrated systems in manufacturing and service industries that include people, materials, equipment, information, and energy. Graduates will be prepared for careers in higher levels of system design, integration, and management. To earn the B.S. with a major in industrial engineering technology, you must fulfill the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and of the A.S., and complete the following credits, earning a grade of C or better in those courses that serve as prerequisites:

IPFW General Education Requirements

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Required Core and Concentration (Major) Courses

IET 304 - Advanced Metrology

Variable and attribute gage capability studies; measurements and calculations of repeatability, reproducibility, bias, stability, and linearity; measurement uncertainty; traceability to NIST standards; inspection of parts using GD&T callouts.

Preparation for Course

P: 204, MET 223.

Cr. 3.

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

IET 362 - Technological Optimization

An introduction to linear programming applied to optimization in a manufacturing environment.

Preparation for Course

P: 105, MA 159.

Cr. 3.

Hours

Class 3,

IET 369 - Manufacturing Simulation

An introduction to computer simulation of complex manufacturing systems.

Preparation for Course

P: 105, STAT 301, CS 114.

Cr. 3.

Hours

Class 3,

IET 401 - Manufacturing Process Planning

Analysis and planning of common production processes.

Preparation for Course

P: MET 104, MET 335.

Cr. 3.

Hours

Class 3,

Grade of C or better required

IET 454 - Statistical Process Control

Online process control including design and analysis of process control charts and sampling plans.

Preparation for Course

P: 204, STAT 301.

Cr. 3.

Hours

Class 3,

IET 480 - Cost Estimating and Design

Economic design of manufacturing systems. Includes a capstone project.

Preparation for Course

P: 204, 267, 310, 401; senior status.

Cr. 3.

Hours

Class 0-5, Lab. 0-9,

MET 300 - Applied Thermodynamics

The fundamentals of thermodynamics including application of the first and second laws, enthalpy, entropy, reversible and irreversible processes.

Preparation for Course

P: MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

MET 347 - Programming of Automation Systems

A study of programming on computer numerical control systems, including tool geometry compensation, coordinate transformation, and macros for developing canned cycles; and study of geometric and kinetic characteristics of industrial robots, end-effectors, sensors, applications, programming and safety.

Preparation for Course

P: ECET 114, PHYS 219, MET 223, 335; and ENG W234.

Cr. 3.

Hours

Class 2, Lab. 3,

Additional Required Technical Courses**CHM 111 - General Chemistry**

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECET 211 - Electrical Machines and Controls

Lecture, demonstration, and laboratory experiments are combined to acquaint the student with the elements of electrical power circuits and machines.

Preparation for Course

P: MA 154.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Notes

Course not open to EET students.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Additional Required Support Courses

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Additional Core and Concentration (Major) Electives

- Any two courses from IET or MET or a course approved by an IET advisor Credits: 6

Total including 64 from A.S. Credits: 128

Information Systems (B.S.)

Program: B.S.

Department of Computer & Electrical Engineering Technology & Information Systems

College of Engineering, Technology, and Computer Science

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.
- An understanding of processes that support the delivery and management of information systems within a specific application environment.

The Bachelor of Science in Information Systems prepares you for a career as a computer professional as well as for possible graduate study.

The CEIT department also offers the Associate of Science with a major in information systems, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in electrical engineering technology. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

In addition to satisfying the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), you must complete the courses required for the A.S. with a major in information systems (see above) and the following additional courses. Only courses in your major field for which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades (including any from the A.S. program) will be accepted in other courses.

- Credits in approved second course in business or economics Credits: 3
- Credits in approved advanced communication course Credits: 3
- Additional credits in approved electives Credits: 10

IPFW General Education Requirements Credits: 12

Area II—Natural and Physical Sciences Credits: 3

*See Part 2 General Education Requirements for approved courses
(may be fulfilled by courses satisfying other requirements)*

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses Credits: 18

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 365 - Advanced Database Systems

The first part of the course includes theory of SQL, implementation of some components of DBMS, and a comprehensive project. The second part of the course includes more advanced topics such as recovery; concurrency; and distributed, deductive, and knowledge databases.

Preparation for Course

P: CS 364.

Cr. 3.

IST 366 - Structured Analysis Techniques

Methods used in analyzing information systems. Topics include user interviewing and observation, event analysis, data flow diagrams, data dictionaries, mini-specifications, decision trees, decision tables, and both logical and physical models. Students practice these techniques in a major structured analysis project resulting in a requirements specification document.

Preparation for Course

P: CS 260 and ENG W234.

CR. 3.

IST 367 - Structured Design Techniques

Methods used in designing information systems. Topics include structure charts, module specifications, pseudocode, coupling, cohesion, transform analysis, transaction analysis, and user interface design. Includes the detailed design of an information system and the implementation of prototype of that design.

Preparation for Course

P: IST 366 or CS 366.

Cr. 3.

IST 466 - Strategic Issues for Information Systems

Topics in information systems management including strategic planning for competitive advantage, chargeback, systems portfolio risk analysis, security, and assimilating technology advances. Students develop an information systems strategic plan.

Preparation for Course

P: IST 366 or CS 366.

Cr. 3.

IST 467 - Project Management

Covers the techniques required to manage systems development. Topics include project proposal, planning, estimating, organizing, controlling, and completion. Students practice these techniques on a major project using project management software.

Preparation for Course

P: senior standing either in IS or IST or CS and ENG W234.

Cr. 3.

Supporting Courses Credits: 24

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Approved Second Course in Business or Economics Credits: 3

Approved Advanced Communication Course Credits: 3

Approved Advanced Electives (CS, BUS, ECON, OR MA) Credits: 9

Elective Credits: 6

Approved Elective Credits: 6

Total Including 64 from A.S. Credits: 124

Interior Design (B.S.)

Program: B.S.

**Department of Manufacturing & Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students are able to advance their learning.
 - Be able to interact with multiple disciplines
 - Have exposure to a variety of business
 - Have opportunities for design work experience
- Students have the attitudes, traits, and values of professional responsibility, accountability, and effectiveness.
 - Have professional ethics and the role of ethics in the practice of interior design.
 - Have environmental ethics and the role of sustainability in the practice of interior design.
 - Have a global perspective and approach to thinking and problem solving.
 - Have critical, analytical, and strategic thinking abilities.
 - Be able to have creative thinking (exhibit a variety of ideas, approaches, concepts with originality and elaboration).
 - Have the ability to think visually and volumetrically.
 - Have professional discipline skills (for example, time management, organizational skills).
 - Have active listening skills leading to effective interpretation of requirements .
- Students have a foundation in the fundamentals of art and design; theories of design, green design, and human behavior; and discipline-related history.
 - Be able to utilize design elements (for example, space, line, mass, shape, texture) and principles (for example, scale, proportion, balance, rhythm, emphasis, harmony, variety).
 - Be able to utilize color principles, theories, and systems (for example, additive and subtractive color; color-mixing; hue, value, and intensity; the relationship of light and color).
 - Be able to utilize theories of design and design composition.
 - Understanding principles of lighting design (for example, color, quality, sources, use).
 - Understanding of theories of human behavior in interior environments.
 - Understanding of principles and theories of sustainability.
 - Understanding of the history of art, architecture, interior and finishes.
- Students understand and apply the knowledge, skills, process, and theories of interior design.
 - Apply 2-dimensional design elements and principles in interior design projects.
 - Apply 3-dimensional design elements and principles to the development of the spatial envelope (for example, volumes of space, visual continuity and balance, visual passages, interconnecting elements).
 - Select and apply color in interior design projects.
 - Have programming skills.
 - Have competent schematic design, concept development, and problem solving skills.
 - Have competent design development skills.
 - Have competent skills in preparing drawings, schedules, and specifications as an integrated system of contract documents, appropriate to project size and scope and sufficiently extensive to show how design solutions and interior construction are related.
 - Have design development skills.

- Students communicate effectively.
 - Be competent in drafting and lettering, both manual and computer-aided techniques.
 - Be competent in illustrative sketching.
 - Be competent in presentation of color, materials, and furnishings (for example, sample boards, collages, mock-ups, digital representations).
 - Be able to express ideas clearly in oral presentations and critiques.
 - Be able to communicate clearly in writing (using correct spelling, grammar, and syntax) in specifications, schedules, and contracts and other business-related documents such as project programs, concept statements, reports, research papers, resumes, and correspondence.
 - Be able to render by any medium, manual or computer-generated, that successfully communicates the design intent.
 - Be able to communicate 3-dimensional space and form, such as in perspectives, pralines, and models (computer-generated or manual).
 - Have the ability to apply the metric system to design work.
 - Be able to communicate through alternative presentation techniques (for example, audio, electronic, film, photography, slides, video).
- Students are able to design within the context of building systems. Students are able to use appropriate materials and products.
 - Understanding that design solutions affect and are impacted by construction system and method, mechanical, electrical, plumbing/HAVC and other systems.
 - Be able to select and apply materials and products appropriately on the basis of their properties and performance criteria.
 - Have the knowledge of sources for materials and products.
 - Understanding of the concept of sustainable building methods and materials.
 - Have the knowledge of installation methods (for example, carpet, resilient flooring, wall covering).
 - Understanding material maintenance requirements.
- Students are able to apply the laws, codes, regulations, standards, and practices that protect the health, safety, and welfare of the public.
 - Understanding of the impact of fire and life safety principles on space planning.
 - Have the ability of appropriate application of codes and regulations, barrier-free design guidelines, ergonomic and human factors data.
 - Understanding of the impact on health and welfare of indoor air quality, noise and lighting.
 - Demonstrate understanding of universal design concepts and principles.
- Students have a foundation in business and professional practice.
 - Understanding of project management practices.
 - Have the knowledge of certification, licensing, and registration requirements and professional design organizations.
 - Understanding of basic business computer applications (for example, word processing, spreadsheets).
 - Have the knowledge of business processes (for example, marketing, strategic planning, and accounting procedures).

This program prepares graduates to work as interior design professionals providing creative and project management services for a variety of clients including homeowners, business owners, institutions, manufacturers, and those planning special events. This program will be open to those who have completed an associate degree in interior design. Program elective courses allow students to develop a specialty area in theatre design or commercial equipment and kitchen design. Through the three-course senior design requirement, students will graduate with a specialty in one of the following areas: residential design, special populations - aging, healthcare design, education design, hotel design, restaurant design, or corrections design.

To earn the B.S. with a major in interior design, you must satisfy the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and the A.S. degree program. You must earn a grade of C or better in each required INTR course, and complete the requirements listed below:

IPFW General Education Requirements

Area II—Natural and Physical Sciences Credits: 3

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses (36 credits)

- Interior Design Electives Credits: 6
(department-approved courses)
- Interdisciplinary Design Topic Credits: 3
(department-approved courses)
- Leadership/Communication Elective Credits: 3
(department-approved courses)

INTR 306 - Interior and Furniture Styles I

All courses in historical interiors and furniture styles include slides or photographs of each period. Each student will be required to keep a notebook. I. Historical interiors and furniture styles of the ancient world: Egyptian, Greek, Roman, Byzantine, Romanesque, Gothic, and 15th, 16th, and 17th centuries of Renaissance Europe.

Preparation for Course

P: 220.

Cr. 3.

INTR 307 - Interior and Furniture Styles II

All courses in historical interiors and furniture styles include slides or photographs of each period. Each student will be required to keep a notebook. Historical interiors and furniture styles of the 18th, 19th, and 20th centuries in France, England, and the United States.

Preparation for Course

P: 306.

Cr. 3.

INTR 308 - Contract Interior Design I

An environmental study of the principles of commercial/institutional design with special emphasis on sociophysiological factors relating to the design elements of individual contract projects.

Preparation for Course

P: Junior standing in the INTR program; INTR 112.

Cr. 3.

INTR 309 - Contract Interior Design II

The development and application of spatial concepts through the design of a commercial/institutional interior project. Incorporates contents of all prerequisite courses. Presentation techniques will be emphasized.

Preparation for Course

P: 308 and VCD P476.

Cr. 3.

INTR 400 - Interior Design Studio I

The course emphasizes development of a functional need program, and design of complex interior spaces, with special consideration of psychological aspects of spatial components. Studio projects will be chosen from the following list: residential design, special population - aging; healthcare design, education design, hotel design, restaurant design, or corrections design.

Preparation for Course

P: INTR 241, INTR 309, and INTR 402.

Cr. 3

INTR 402 - Professional Practice

The study of professional office and business procedures for the practice of interior design. Includes public relations, marketing, legal, accounting and financial considerations, professional organizations and conduct, resourcing, project

management, contracts, forms, and documents.

Preparation for Course

P: INTR 308, ENG W232.

Cr. 3.

INTR 404 - Interior Design Practicum

Special problems in planning, furnishing, design, crafts, or work-study.

Preparation for Course

P: INTR 400, ENG W232, and OLS 342.

Cr. 3.

Supporting Courses

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

OLS 342 - Interviewing Strategies in Organizations

A study of the various interviews supervisors conduct in organizational settings. This course focuses on general interviewing principles as well as specific types of interviews including selection, information gathering, disciplinary, and performance appraisals.

Preparation for Course

P: OLS 252 and COM 114

Cr. 3.

VCD P476 - Three-Dimensional Computer Modeling

Concentration on three-dimensional modeling and environments - object building and manipulation, lighting, atmosphere, and surface mapping. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

Total Credits: 60

Interpersonal and Organizational Communication (B.A.)

Program: B.A.**Department of Communication****College of Arts and Sciences**

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

The student learning outcomes for the degree are as follows:

- Identify and explain the elements for effective communication.
- Demonstrate successful communication, both orally and in writing.
- Communicate effectively interpersonally and in groups.
- Evaluate interpersonal and group interactions.
- Articulate explain theories of nonverbal, interpersonal, small group and organizational communication.

This program helps you understand human communication and develop skill and sensitivity in speaking, listening, and participating in varied communication situations. Courses focus on theory and practice in communication tasks ranging from interviewing to addressing large audiences. The degree program helps you prepare for a career in government, sales, public relations, law, public and social service, personnel, or business and industrial communication.

The Department of Communication offers related bachelor's degree programs in media and public communication and a minor in media production for those students who want more courses in practical skills.

To earn the B.A. with a major in interpersonal and organizational communication, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Communication as listed below. You also must earn a minor in an appropriate discipline. Two courses in a major offered in the Department of Communication can also be counted in the required minor. If the minor is selected from an Arts and Sciences department, the courses may be used to satisfy distribution requirements in the College of Arts and Sciences.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundation

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- *Additional credits (Not in COM) in Area III Credits: 3*

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

Credits: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses (not in COM)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses (not in COM)

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in COM)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

2.0 required in all courses in the major.

COM 120 - Introduction to Communication Technology and Communication Fields

This is the first of a series of three, one credit courses that all Communication majors at IPFW entering Fall 06 and after are required to take. The applied portion of this course will introduce students to technology and software that is desirable for communication professionals. This course will also provide students with an overview of the general fields to which their degree will most likely lead them.

Cr. 1.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 308 - Applied Communication

This course explores the varied fields of communication. Students will be exposed to varied fields where they may utilize their degree. Students will also learn and practice job-seeking skills including job search, resume and cover letter preparation, and interviewing protocol and skill.

Preparation for Course

P: COM 120.

Cr. 1.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 320 - Small Group Communication

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups. Focus on the roles, networks, and messages employed by small group communicators.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

COM 480 - Senior Seminar in Communication

This course is designed as a capstone for the communication major. It will require students to demonstrate proficiency in oral, written, and mediated communication. Students will synthesize their knowledge of communication theory and content.

Preparation for Course

P: COM 120.

Cr. 1.

Credits from among the following: 9

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 310 - Family Communication

Application of theories of interpersonal communication to family life. Emphasis on feedback, empathy, and trust as contributing factors to effective communication with families. A case study approach is used.

Preparation for Course

P: 114.

Cr. 3.

COM 325 - Interviewing: Principles and Practice

Theory and practice of methods in selected interview settings: informal, employment, and persuasive. Emphasis on communication between two persons, questioning techniques, and the logical and psychological bases of interpersonal persuasion.

Preparation for Course

P: 114.

Cr. 3.

COM 410 - Gender Roles and Communication

This course is designed to investigate the relationship between gender roles and communication; i.e., how gender roles are socially constructed, maintained, and enacted. The course also explores gender differences, similarities, and gender issues in personal and organizational contexts.

Preparation for Course

P: 114.

Cr. 3.

COM 471 - Communicating Peace

Examines the processes by which peace and/or violence are constructed at all communicative levels (intrapersonally, ideologically, and internationally) through face-to-face and mediated communication channels. Students gain an understanding of how we use and misuse communication processes to create peace and/or violence and learn skills for communicating peace.

Preparation for Course

P: 114.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.

Credits from among the following: 6

COM 507 - Introduction to Semiotics

The study of languages, literatures, and other systems of human communication. Includes a wide range of phenomena that can be brought together by means of a general theory of signs. The course deals with three fundamental areas: 1) verbal communication, 2) nonverbal communication (iconic systems, gestures, body language, etc.), and 3) communication through art forms.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 508 - Nonverbal Communication in Human Interaction

An examination of theoretical writings and critical studies in selected areas of nonverbal communication, e.g., environmental influences, space and territory relationships, physical appearance and dress, physical behavior, and vocal cues. One unit will specifically concern itself with measurement, recording, or transcription methods used in nonverbal study.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 512 - Theories of Interpersonal Communication

Review of contemporary theories, analysis of concepts, models, and pertinent research across the broad spectrum of interpersonal communication.

Preparation for Course

P: COM 212 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 516 - Analysis of Persuasive Messages

An examination of the ideational, structural, linguistic, and philosophical dimensions of persuasive messages. Emphasis on theoretical and practical components of contemporary persuasion.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 518 - Theories of Persuasion

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 520 - Small Group Communication

Survey and critical evaluation of theoretical and empirical literature dealing with human communication within small group settings.

Preparation for Course

P: COM 320 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 523 - Communication in Personal Relationships

Explores the initiation, development, maintenance, and deterioration of family, friend, and romantic relationships. Explores relational phenomena, such as communication and gender differences, computer-mediated relationships, attraction, relational culture, and stages of dissolution.

Preparation for Course

P: COM 212.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 525 - Advanced Interviewing

Application of modern communication theory to interview situations with emphasis upon problems involving superior-subordinate relations, information-getting, and interpersonal misunderstanding. Classroom demonstrations based upon real-life cases, supplemented by off-campus interviews; practice in briefing techniques.

Preparation for Course

P: 325 or equivalent.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 574 - Organizational Communication

Survey of the theoretical and empirical literature dealing with human communication behavior as it occurs within the context of complex organizations. Among topics covered are superior-subordinate communication, communication networks, message distortion, feedback processes, internal corporate mass media, managerial-communication climate, semantic and stylistic dimensions of messages, and communication in decision making.

Preparation for Course

P: COM 324 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Minor and Elective Courses

- Credits in approved minor (with grades of C or higher) Credits: 12–21
- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Labor Studies (B.S.)

Division of Labor Studies**Program Offered: B.S.L.S.**

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the Bachelor of Science in Labor Studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses.

Program Requirements

Credits from the Labor Studies Core Credits: 15

Additional Credits in Labor Studies Courses Credits: 27

Required Areas of Learning

Labor Studies is a university-wide degree program, certified through Indiana University's School of Social Work. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities (12 Credits)

- Afro-American Studies
- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Film
- Fine Arts

- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Religion
- Theatre
- Visual Communication and Design

Science and Mathematics (15 Credits)

- Credits in Computer Science required Credits: 3
- Credits from at least two different subjects from the courses listed Credits: 12
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K215, and K216)
- Entomology
- Forestry and Natural Resources
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- Statistics

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E445 - Medical Anthropology

An examination of the cross-cultural properties of disease and curing. Focus on investigations into the ideology and meaning of illness, the relationship between patient and healer, and how responsibility for illness is assigned. Medical anthropology is concerned with knowledge about sociocultural contexts of disease and healing and with how such knowledge might inform the management of our own health problems.

Cr. 3.

Session Indicators

(spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 310 - Sensory and Perceptual Processes

Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Social and Behavioral Sciences Area of Learning Credits: 12

- Credits in economics is required (ECON E200 or E201 recommended), L230 meets requirement.
- Credits from at least two different subjects below Credits: 9
- Anthropology
- Economics
- Geography
- Linguistics
- Psychology

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Additional Credits from One Area of Learning Credits: 12

Electives Credits: 27

Note

You must earn a minimum of 20 credits after admission to labor studies and may apply toward the degree no more than 21 credits in a single subject other than labor studies. At least 30 of your credits must be in 300/400-level courses, including at least 12 credits in labor studies courses. You must complete at least 24 credits while enrolled as an IU student.

Total Credits: 120

Mathematics (B.S.)

Program Offered: B.S.

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students who complete the undergraduate mathematics major should be able to reason mathematically and should be good problem solvers. Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g. physics, engineering, and business.
- In addition to 1. above, students who complete the Mathematics option should understand the fundamental concepts in algebra and analysis. They should understand the value of mathematical proofs and should be able to do simple proofs.
- In addition to 1. above, students who complete the Actuarial Science option should have had sufficient preparation in calculus, linear algebra, probability, and statistics to pass the preliminary Actuarial Science examinations.
- In addition to 1. above, students who complete the Mathematics Teaching option should have mastered the fundamental concepts necessary to obtain certification to teach mathematics in the secondary schools.

Programs leading to the Bachelor of Science help you prepare for employment in business and industry, teaching in secondary schools, or study for advanced degrees. As a mathematics major you choose one of six options: actuarial science, business, computing, mathematics, mathematics teaching, or statistics.

To earn a B.S. with a major in mathematics, you must satisfy the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Mathematical Sciences. Required course work appears below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- MA The quantitative-reasoning requirement is satisfied by mathematics courses below. Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

See Part 2 General Education Requirements for approved courses

- Includes two laboratory courses (*The science courses must be selected from a list approved by the department.*) Credits: 11

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in MA) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

Of the mathematics courses numbered below 261, only 165, 166, and 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted. You must have a grade-point average of 2.0 or better with at most one passing grade less than 1.5 in courses used to fulfill the major requirements.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Choose one of the following:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Option Courses (see below) Credits: 46–56

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124

Total Credits: 124

Actuarial Science Option

This option, designed in consultation with professionals from the insurance industry, includes courses that help you prepare for a variety of positions in that field. In particular, it helps you prepare for the first of the series of examinations by the Society of Actuaries. Additional information is available from the department.

- Credits in three electives selected from a list of courses approved by the department Credits: 9
- Credits in electives (two additional finance courses, BUS F302 and F420 highly recommended) Credits: 13-16

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

(before enrolling in F301, you must complete the following with grades of C or better: BUS A201-A202, CS 160, ECON E201-E202, MA 165, and STAT 511)

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and

unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Business Option

This option is designed for students who plan to pursue a career in business or industry. In addition to obtaining useful mathematics and statistics tools, the student who completes this option will also receive a minor in business.

Option Specific Courses Credits: 21

- Credits in courses selected from a departmentally approved list (MA 363, 417/418, 441, 453, 511, 525, STAT 514, 517) Credits: 6

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Business Minor Credits: 22

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(counted as a general education course in Area III)

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

Credits in two courses selected from the following list Credits: 6

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

General elective courses Credits: 10–13

Total Credits: 53-56

Computing Option

This option helps you prepare for computer-related careers for which a strong mathematical background is advantageous. The student who completes this option will also receive a minor in computer science.

Option Specific Courses Credits: 15

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

One of the following Credits: 3

MA 441 - Real Analysis

The theory of functions of a real variable; continuity, theory of differentiation and Riemann integration, sequences and series of functions, uniform convergence, interchange of limit operations.

Preparation for Course

P: MA 305 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 556 - Introduction to the Theory of Numbers

Divisibility, congruences, quadratic residues, Diophantine equations, the sequence of primes.

Preparation for Course

P: MA 263 or 261.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Two of the following Credits: 6

- MA 441, 453, 511, 556, 575, STAT 511, or STAT 516 if not taken to satisfy above requirements.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests

of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science Minor Credits: 22

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 331 - Introduction to C++ and Object-Oriented Programming

An introduction to the C++ language with emphasis on features supporting object-oriented programming. Fundamental data type and operations. Expression evaluation. Selection and iteration constraints. Functions, procedures, and macro. Standard libraries. Classes: declaration and definition; instances; member functions; constructors and destructors; function overloading; inheritance and polymorphism. Stream input and output. Using classes to encapsulate data structure and implementation details.

Preparation for Course

P: CS 260.

Cr. 3.

Two of the following Credits: 6

- Select two courses from a departmentally approved list Credits: 6
- Credits in electives: 16–19

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

CS 543 - Introduction to Simulation and Modeling of Computer Systems

Simulation: discrete event simulation, process-oriented simulation, generating random numbers, simulation languages, simulation examples of complex systems. Nondeterministic models: random variables, Poisson process, moment generating functions, statistical inference and data analysis. Modeling: elementary queuing models, network of queues, applications to performance evaluation of computer systems.

Preparation for Course

P: STAT 511 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

CS 572 - Heuristic Problem Solving

Design and development of heuristic problem-solving systems. The emphasis is on the development of general data representations, heuristics, and problem-solving strategies that can be applied to wide classes of problems. The task areas explored include game playing, theorem proving, pattern recognition, semantic information processing, cognitive

psychology, design synthesis, robotology, and integrated artificial intelligence systems.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

Total Credits: 53-56

Mathematics Option

This option helps you prepare for graduate study in the mathematical sciences or for work in fields where a strong mathematical background is required.

Program Requirements

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

MA 441 - Real Analysis

The theory of functions of a real variable; continuity, theory of differentiation and Riemann integration, sequences and series of functions, uniform convergence, interchange of limit operations.

Preparation for Course

P: MA 305 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

One of the following Credits: 3

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 31–34

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 52-55

Mathematics Teaching Option

This option provides the mathematical preparation necessary for teaching secondary-school mathematics in Indiana. You are encouraged to choose and complete a teaching minor.

Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The Praxis II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Information on additional requirements for teacher certification is available in the department office.

Program Requirements

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following Credits: 3

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 34–37

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 52–55

Statistics Option

This option helps you prepare for careers in business and industry and emphasizes the statistical methods used in decision making. It also provides entry-level preparation for an actuarial career.

Program Requirements

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 31–34

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 514 - Design of Experiments

Fundamentals, completely randomized design; randomized complete blocks; latin square; multi-classification; factorial; nested factorial; incomplete block and fractional replications for $2n$, $3n$, $2m \times 3n$; confounding; lattice designs; general mixed factorials; split plot; analysis of variance in regression models; optimum design. Use of existing statistical programs.

Preparation for Course

P: STAT 512 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Note

The research certificate is described under Arts and Sciences in Part 3 of this Bulletin.

Total Credits: 52-55

Mathematics Teaching (B.S.)

Program: B.S.

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students who complete the undergraduate Mathematics Teaching major should be able to reason mathematically and should be good problem solvers. Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g., physics, engineering, and business.
- Students who complete the Mathematics Teaching major should have mastered the fundamental concepts necessary to obtain certification to teach mathematics in the secondary schools.

The B.S. program provides the mathematical preparation necessary for teaching secondary-school mathematics in Indiana and is designed to meet standards for teacher certification. Information on additional requirements for teacher certification is available in the department office. You are encouraged to choose and complete a teaching minor.

To earn a B.S. with a major in mathematics teaching, you must satisfy the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Mathematical Sciences. Required course work appears below. (Note that you are not required to include foreign-language study.)

You should work closely with your academic advisor when choosing free electives and courses to meet the IPFW general-education requirements so as to ensure completion of the certification requirements set by the Indiana Professional Standards Board for teacher certification. Full information about teacher certification is available from the School of Education. To be certified, you must have a GPA of 2.00 or higher in the College of Arts and Sciences' general-education distribution areas of humanities and social and behavioral sciences. Additionally, you must have a GPA of 2.50 or higher in your teaching major of mathematical sciences and the professional education courses listed below and an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- **MA** - The quantitative-reasoning requirement is satisfied by mathematics courses below. Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 11

See Part 2 General Education Requirements for approved courses

Includes two laboratory courses. (Science courses must be selected from list approved by the department.)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in MA) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses

Of the mathematics courses numbered below 261, only 165, 166, and 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted. You must have a grade-point average of 2.0 or better with at most one passing grade less than 1.5 in courses used to fulfill the mathematics concentration.

- Credits in courses selected from a departmentally approved list Credits: 6

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements**EDUA F300 - Topical Exploration in Education**

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

EDUC M448 - Methods of Teaching High School Mathematics

Cr. 2-4.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

Sufficient additional credits to bring the total to 124. Some may be restricted depending on choices for general education requirements. You are encouraged to acquire a teaching minor (see School of Education for information).

Total Credits: 124

Mechanical Engineering (B.S.M.E.)

Program: B.S.M.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the electrical degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve mechanical engineering problems
- Graduates will demonstrate the ability to design and conduct experiments, interpret and analyze data, and report results
- Graduates will demonstrate the ability to design a mechanical system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams

- Graduates will use modern engineering software tools and equipment to analyze mechanical engineering problems
- Graduates will demonstrate an understanding of the professional and ethical responsibility
- Graduates will be able to communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Mechanical engineers deal with the design, analysis, testing, production, and utilization of all types of mechanical equipment. They are also involved in solving problems brought about by ever increasing demands from a growing world population. For example, mechanical engineers are looking for ways to control air pollution from combustion products and thermal pollution resulting from power plants (nuclear or fossil-fueled). They study noise pollution and how to suppress it; and they develop urban vehicles for efficient, safe, environmentally-friendly transportation. They design medical implants and aids such as stints and artificial knees. IPFW offers state-of-the-art knowledge in all areas of mechanical engineering such as thermal sciences, dynamic systems, and robotics.

To earn the B.S.M.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

- with the exception of MA 314, PHYS 325, and STAT 340.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 50

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ME 200 - Thermodynamics I

First and second laws, entropy, reversible and irreversible processes, properties of pure substances, applications to engineering problems.

Preparation for Course

C: MA 261.

Cr. 3.

Hours

Class 3,

ME 250 - Statics

Forces and couples, free body diagrams, two- and three-dimensional equilibrium of a particle and rigid bodies. Principles of friction, centroids, centers of gravity, and moments of inertia. Virtual work, potential energy, and static

stability of equilibrium. Internal forces, shear and bending moment diagrams.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 3.

Hours

Class 3.

ME 251 - Dynamics

Kinematics of particles in rectilinear and curvilinear motion. Kinetics of particles, Newton's second law, energy and momentum methods. Systems of particles. Kinematics and plane motion of rigid bodies, forces and accelerations, energy and momentum methods. Introduction to mechanical vibrations.

Preparation for Course

P: 250; C: MA 263.

Cr. 3.

ME 252 - Strength of Materials

Plane stress, plane strain, and stress-strain laws. Applications of stress and deformation analysis to members subjected to centric, torsional, flexural, and combined loading. Introduction to theories of failure, buckling, and energy methods.

Preparation for Course

P: ME 250.

Cr. 3.

ME 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation and presentation of experimental results are illustrated. Statistic and design of experiments are emphasized.

Cr. 2.

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

ME 303 - Material Science and Engineering

Concepts of materials science and their relevance to engineering design. Structure, properties, and uses of engineering materials. Strengthening methods and environmental effects.

Preparation for Course

P: CHM 115 and PHYS 251; C: ME 252.

Cr. 2.

ME 304 - Mechanics and Materials Laboratory

Experimental determination of mechanical properties of selected engineering materials. Experimental verification of assumptions made in ME 252. Use of strain measuring devices. Design of experiments.

Preparation for Course

P: 282, 303, C: 307.

Cr. 1.

ME 318 - Fluid Mechanics

Continuum hypothesis, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis and similitude, Euler and Bernoulli equations, Navier-Stokes equations, viscous flows, boundary-layer flow in channels and around submerged bodies, applications.

Preparation for Course

P: 200, 251, MA 363.

Cr. 3.

ME 319 - Fluid Mechanics Laboratory

Introduction to fluid mechanics laboratory and design of experiments, including experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, drag forces, boundary layer studies, falling ball experiments, and measurements of fluid properties.

Preparation for Course

P: 282, 318.

Cr. 1.

ME 321 - Heat Transfer

Fundamental principles of heat transfer by conduction, convection, and radiation; mass transfer by diffusion and convection. Application to engineering situations.

Preparation for Course

C: 318.

Cr. 3.

ME 322 - Heat Transfer Laboratory

Introduction to heat transfer laboratory and design of experiments. Experiments on measurements of temperature and thermal conductivity, transient heat conduction, convection, radiation, boiling, and heat exchangers.

Preparation for Course

P: 282, 321; C: 319.

Cr. 1.

ME 361 - Kinematics and Dynamics of Machinery

Position, velocity, and acceleration analysis and design of machine elements including n-bar linkages, cam followers, and gear trains. Dynamic force analysis and balancing of linkages; flywheels; introduction to cam dynamics.

Preparation for Course

P: ME 251, MA 363.

Cr. 3.

ME 369 - Design of Machine Elements

Application of principles of strength of materials to the design of typical mechanical components.

Preparation for Course

P: ME 252, 303, and 361.

Cr. 3.

ME 371 - System Dynamics and Introduction to Control

Introduction to mathematical modeling and response analysis of dynamic systems with mechanical, electrical, and fluid/thermal elements used in control systems. Concepts of analogous systems; transfer function, and state space formulation; analysis in time-domain; analysis in frequency-domain; introduction to modern control theory.

Preparation for Course

P: ME 251, 280, 281.

Cr. 4.

ME 387 - Electronics and System Engineering through Robotics

Introduction to robotics; microcontrollers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, PHYS 251, ME 251.

Cr. 3.

ME 388 - Electronics and System Engineering through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical, and computer engineering designs.

Preparation for Course

C: 387.

Cr. 1.

ME 487 - Mechanical Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of mechanical component/system design from concept through final design. Emphasis on teamwork, project management, testing through simulation or prototype, oral and written communications.

Preparation for Course

P: 321 and 369.

Cr. 3.

ME 488 - Mechanical Engineering Design II

Continuation of ME 487.

Preparation for Course

P: ME 487.

Cr. 3.

Required Electrical and Computer Engineering Course Credits: 3

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

Mathematics and Science Requirements Credits: 19

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 12

Students must select at least three courses from Group 1.

Group 1

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ME 421 - Heating and Air Conditioning I

Fundamentals of fluid flow and heat transfer. Comfort conditions. Psychometrics. Solar radiation. Design conditions. Heating and cooling loads. Ventilation. Air distribution. Fans and pumps. Duct design. Air conditioning system.

Preparation for Course

P: 321 and 322.

Cr. 3.

ME 424 - Design and Optimization of Thermal Systems

Application of the principles of thermodynamics, fluid mechanics, and heat transfer to the design of thermal systems with an emphasis on modeling, simulation, economic analysis, and optimization. Systems to be studied include heat exchangers, thermal storage devices, fluid machinery, pipes and ducts, and electronics cooling devices.

Preparation for Course

P: 301 and 321.

Cr. 3.

ME 425 - Intermediate Heat Transfer: Theory and Applications

Analytical study of conduction; energy and momentum equations in convective heat transfer and review of empirical relations; boiling and condensation; applications in heat transfer such as heat exchangers, refrigeration and freezing of foods, cooling of electronic equipment, and heating and cooling of buildings.

Preparation for Course

P: 321, 322.

Cr. 3.

ME 454 - Intermediate Dynamics with Computer Applications

Introduction to the advanced theories of dynamics and application of the digital computer as a tool in engineering design and analysis of structural members and machine components in motion.

Preparation for Course

P: 371.

Cr. 3.

ME 471 - Vibration Analysis

Introduction to simple vibratory motions such as damped and undamped free and forced vibrations, resonance, vibratory systems with more than one degree of freedom, Coulomb and hysteretic damping, transverse vibration of beams, torsional vibration, computation of natural frequencies and mode shapes, applications.

Preparation for Course

P: 251.

Cr. 3.

ME 480 - Finite Element Analysis

Introduction to the finite-element method through applications to problems in elasticity and heat transfer. Emphasis on one- and two-dimensional problems. Computer implementation.

Preparation for Course

C: 321 and 369.

Cr. 3.

- ME 505 Intermediate Heat Transfer Cr. 3
- ME 509 Intermediate Fluid Mechanics Cr. 3
- CE 570 Advanced Structured Mechanics Cr. 3
-

Other 5xx-level courses offered by the engineering department may be included in Group 1 with approval.

Note a course cannot be counted towards both an undergraduate degree and a graduate degree.

Group 2

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or CE 418 Introduction to Systems Engineering Cr. 3

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and ztransfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ECE 595 - Selected Topics in Electrical Engineering

Formal classroom or individualized instruction on topics of current interest. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Dual Level, Undergraduate-Graduate

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 523 - Introduction to Partial Differential Equations

First-order quasi-linear equations and their application to physical and social sciences; the Cauchy-Kovalevsky theorem; characteristics, classification, and canonical form of linear equations: equations of mathematical physics; study of the Laplace, wave, and heat equations; methods of solution.

Preparation for Course

P: MA 261 or 263 and 363.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 525 - Introduction to Complex Analysis

Complex numbers and complex-valued functions of one variable; differentiation and contour integration; Cauchy's theorem; Taylor and Laurent series; residues; conformal mapping; applications.

Preparation for Course

P: MA 263, 441 or 510.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ME 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ME 497 - Mechanical Engineering Projects

Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard undergraduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and

prepare a brief description of the work to be undertaken in cooperation with their advisor.

Preparation for Course

P: Junior standing or higher required.

Cr. 1-6.

Variable Title

(V.T.)

ME 498 - Research in Mechanical Engineering I

Individual research projects for students with honors classification. Requires prior approval of, and arrangement with, a faculty research advisor.

Preparation for Course

P: honors classification.

Cr. 3.

ME 499 - Research in Mechanical Engineering II

Requires submission of a written thesis, public presentation, and oral defense of the research project.

Preparation for Course

P: ME 498 and honors classification.

Cr. 3.

Notes

Continuation of ME 498.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

- SE 510 Introduction to Systems Engineering Cr. 3

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Students must select at least three courses from Group 2. Other 5xx-level courses offered by the engineering department may be included in Group 2 with approval. Note a course cannot be counted towards both an undergraduate degree and a graduate degree.

Total Credits: 126

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Mechanical Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of mechanical systems, mechanical components or manufacturing processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems in mechanical engineering and engineering technology.
- An ability to communicate effectively.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, problem-solving ability, and hands-on skills to enter careers in analysis, applied design, development, implementation, manufacturing, testing, technical sales, evaluation, or oversight of mechanical systems and processes.

To earn the B.S. with a major in mechanical engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and the A.S., and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites:

- Technical expertise in engineering materials, statics, dynamics, strength of materials, fluid mechanics, fluid power, thermodynamics, heat transfer, and electronic control.
- Technical expertise in manufacturing processes, mechanical design, and computer-aided engineering graphics, engineering materials, automatic controls, industrial operations with added technical depth in manufacturing processes, computer-aided engineering graphics, mechanical design and engineering materials.
- Expertise in applied physics having an emphasis in applied mechanics plus fundamentals of electricity in physics and inorganic chemistry.

IPFW General Education Requirements

Area III—The Individual, Culture, and Society

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

See Part 2 General Education Requirements for approved courses

Required Core and Concentration (Major) Courses

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

MET 247 - Computer-Aided Tool and Fixture Design

Tool design methods; tooling materials and heat treatment; design of cutting tools; gage design; design of drill jigs and fixtures; tool design for NE and CNC machines; tool design on the CAD system. Term projects using the CAD system are required.

Preparation for Course

P: 223; C: 202.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 300 - Applied Thermodynamics

The fundamentals of thermodynamics including application of the first and second laws, enthalpy, entropy, reversible and irreversible processes.

Preparation for Course

P: MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

Grade of C or better required

MET 312 - Dynamics and Mechanisms

The slider crank, four-bar linkage and Scotch Yoke mechanisms along with cam and follower systems will be studied. Both the kinematics and dynamics of the mechanisms will be covered. Dynamic studies will include both Newton's Second Law and energy methods.

Preparation for Course

P: MET 201, 223, MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

MET 347 - Programming of Automation Systems

A study of programming on computer numerical control systems, including tool geometry compensation, coordinate transformation, and macros for developing canned cycles; and study of geometric and kinetic characteristics of industrial robots, end-effectors, sensors, applications, programming and safety.

Preparation for Course

P: ECET 114, PHYS 219, MET 223, 335; and ENG W234.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 350 - Applied Fluid Mechanics

The fundamentals of fluid mechanics including properties of fluid, pressure, hydrostatic force on submerged areas; kinematics and dynamics of fluid flow; friction losses and sizing of pipe.

Preparation for Course

P: PHYS 218.

Cr. 3.

Hours

Class 3,

MET 360 - Heating, Ventilating, and Air Conditioning

A study of heat losses, heat-producing equipment, and cooling equipment in addition to the design of the direct systems. Includes controls and cost-estimating for commercial, industrial, and residential systems. Codes and standards are emphasized throughout the course.

Preparation for Course

P: 300.

Cr. 3.

Hours

Class 3,

MET 381 - Engineering Materials

Applications and characteristics of engineering materials used in industry with special emphasis on plastics and other nonferrous materials such as elastomers, composites, ceramics, and glass, including a survey of the processes involved. Also, metallurgy, failure analysis, corrosion resistance, and surface treatments of metallic and nonmetallic materials.

Preparation for Course

P: 180. C: CHM 111.

Cr. 3.

Hours

Class 3,

MET 487 - Instrumentation and Automatic Control

Instrumentation for pressure, temperature, velocity, rpm, strain, force, displacement, acceleration, counting, and sound will be studied. Automatic control will be studied covering topics of on-off and proportional control, programmable controllers, and computer control.

Preparation for Course

P: junior class standing, 216.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 494 - Senior Design and Analysis

This course will focus on mechanical design, finite element analysis, environmental concerns, and/or ethical challenges. Technical reports will be written and one will involve an oral presentation.

Preparation for Course

P: senior class standing.

Cr. 3.

Hours

Class 3,

Additional Required Technical Courses

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECET 211 - Electrical Machines and Controls

Lecture, demonstration, and laboratory experiments are combined to acquaint the student with the elements of electrical power circuits and machines.

Preparation for Course

P: MA 154.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Notes

Course not open to EET students.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Grade of C or better required

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

Computer Programming Elective Credits: 3

Additional Required Support Courses

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Additional Core and Concentration Electives Credits: 6

- Any two courses from IET and MET, or a course approved by an MET advisor.

Total Credits Including 65 from A.S.: 132

Media and Public Communication (B.A.)

Program: B.A.

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

The student learning outcomes for the degree are as follows:

- Articulate explain current mass communication theory
- Identify and analyze the interrelation among media economics and relevant institutions and agencies
- Identify and analyze instances of the interdependent relations between media and society
- Critically analyze, both orally and in writing, media and public communication

The major in media and public communication offers theoretical, critical, and practical perspectives to help you navigate the changing communication environment of the 21st century. The courses in this major help you understand communication and media practices and adapt to new technologies. These courses provide concepts and skills that enable you to think and write critically about media and public communication in relation to society, culture, and everyday life. In addition, course areas are available that give you practical experience in message design, media production, and communication performance. Graduates of the program have careers in public information, media production, writing for media, management, sales, advertising, and public relations.

The Department of Communication offers a bachelor's degree in interpersonal and organizational communication and a minor in media production for those students who want more courses in practical skills. Two courses in a major offered in the Department of Communication can also be counted in the required minor. If the minor is selected from an Arts and Sciences department, the courses may be used to satisfy distribution requirements in the college.

To earn the B.A. with a major in media and public communication, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Communication as listed below. You also must earn a minor in an appropriate discipline.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits (not in COM) in Area III Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

Credits: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought (Not in COM) Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in COM) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in COM)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

COM 120 - Introduction to Communication Technology and Communication Fields

This is the first of a series of three, one credit courses that all Communication majors at IPFW entering Fall 06 and after are required to take. The applied portion of this course will introduce students to technology and software that is desirable for communication professionals. This course will also provide students with an overview of the general fields to which their degree will most likely lead them.

Cr. 1.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 308 - Applied Communication

This course explores the varied fields of communication. Students will be exposed to varied fields where they may utilize their degree. Students will also learn and practice job-seeking skills including job search, resume and cover letter preparation, and interviewing protocol and skill.

Preparation for Course

P: COM 120.

Cr. 1.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 330 - Theories of Mass Communication

An examination of mass communication theories and theorists. Readings and discussion of McLuhan, Lippman, LaFleur, Lazarsfeld, Schramm, Stephenson, and other significant contributors.

Cr. 3.

COM 480 - Senior Seminar in Communication

This course is designed as a capstone for the communication major. It will require students to demonstrate proficiency in oral, written, and mediated communication. Students will synthesize their knowledge of communication theory and content.

Preparation for Course

P: COM 120.

Cr. 1.

One of the following Credits: 3

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below.

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below.

or

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below

Credits from among the following: Credits: 9

2.0 required in all courses in the major

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 312 - Rhetoric in the Western World

An explanation of major theoretical and philosophical concepts concerning rhetoric; the relationships between rhetoric and political, social, and personal decisions are explored. Ancient and modern authors are read.

Preparation for Course

P: 114.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

COM 314 - Advanced Presentational Speaking

Development of a marked degree of skill in the composition and delivery of various types of speeches including presentations in corporate board rooms, orientation meetings, banquet halls, public forums. Special emphasis on speeches related to the student's major vocational area.

Preparation for Course

P: 114.

Cr. 3.

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 325 - Interviewing: Principles and Practice

Theory and practice of methods in selected interview settings: informal, employment, and persuasive. Emphasis on communication between two persons, questioning techniques, and the logical and psychological bases of interpersonal persuasion.

Preparation for Course

P: 114.

Cr. 3.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

COM 352 - Mass Communication Law

Study of Anglo-American traditions and trends, as well as current American conditions of the laws of libel, privacy, fair comment and criticism, privilege, property rights, and copyright as such factors affect the print journalist and the broadcaster. Emphasis is on existing state and federal regulations and precedents. Credit is not given for both COM 352 and JOUR J300.

Cr. 3.

COM 421 - Media Genres

Topic varies. Analysis of typical genres in film and television, such as horror, melodrama, westerns, science fiction, situation comedies, etc. Problems of general description or definition; themes and conventions; iconography peculiar to given genres. May be repeated with a different topic for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 251.

Cr. 3.

Variable Title

(V.T.)

COM 422 - Women, Men, and Media

An examination of the processes by which gender is constructed in the mass communication media. Students will be asked to consider how the technical, economic, and political constraints and capabilities of the media construct images of gender for audiences.

Preparation for Course

P: 250 or permission of instructor.

Cr. 3.

COM 471 - Communicating Peace

Examines the processes by which peace and/or violence are constructed at all communicative levels (intrapersonally, ideologically, and internationally) through face-to-face and mediated communication channels. Students gain an understanding of how we use and misuse communication processes to create peace and/or violence and learn skills for communicating peace.

Preparation for Course

P: 114.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.

Credits from among the following Credits: 3

COM 507 - Introduction to Semiotics

The study of languages, literatures, and other systems of human communication. Includes a wide range of phenomena that can be brought together by means of a general theory of signs. The course deals with three fundamental areas: 1) verbal communication, 2) nonverbal communication (iconic systems, gestures, body language, etc.), and 3) communication through art forms.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 515 - Persuasion in Social Movements

A study of the concept of persuasion in social movement theory and the role rhetoric has played historically in selected social movements such as suffrage, women's liberation, civil rights, evangelism, and trade unionism.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 516 - Analysis of Persuasive Messages

An examination of the ideational, structural, linguistic, and philosophical dimensions of persuasive messages. Emphasis on theoretical and practical components of contemporary persuasion.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 517 - Communication in Politics

Development and application of critical standards to the rhetoric employed by candidates for public office; study of the campaign strategies employed by parties and their candidates at various levels of government.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 518 - Theories of Persuasion

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 521 - Theories of Rhetoric

A comprehensive survey of the principal figures, theories, and movements in rhetoric from the classical era to the present.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 522 - History and Criticism of Public Communication

A survey of speech-making and speech criticism as forces in shaping America from colonial times to World War II. The course examines great American speakers in shaping history through the use of rhetoric and oratory.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 527 - Introduction to Cultural Studies

An examination of selected cultural studies perspectives on mass communication. The course will cover cultural studies philosophies, theories, and/or approaches to the study of cultural artifacts and practices that may include some of the following: postmodernism, deconstruction, feminism, and postcolonialism, privileging context as a means of understanding culture.

Preparation for Course

P: COM 248 or 251 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 531 - Special Topics in Mass Communication

Critical analysis and evaluation of current and continuing problems in both commercial and public mass communication. May be repeated for credit.

Preparation for Course

P: COM 250 and consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 557 - Legal Dimensions of Communication

Analysis of contemporary issues in communication law. Research into selected problems concerning the law and its impact on face-to-face and mass communication.

Preparation for Course

P: COM 352.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 563 - Public Policy in Telecommunication

An examination of the structure and operation of commercial, public, and international telecommunication. Regulatory agencies, both private and public, will be considered in terms of their effect on programming.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Minor and Elective Courses

- Credits in an approved minor (with grades of C or higher) Credits: 12–21
- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Music and an Outside Field (B.S.)

Program: B.S.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures

Aural Perception. Students will demonstrate the ability to:

- ability to relate the cognitive to aural perception and to aesthetic responsefakeFCKRemove
- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Students will develop expertise in music and a complementary field by combining the music core curriculum and performance studies with 26-30 hours of another discipline, demonstrated through the following:

- ability to articulate the relationship of music to the outside field or their personal rationale for combining the two areas
- expertise in the outside field through such capstone experiences as internships and senior projects for such skills-related outside field such as business or theatre
- expertise in the outside field by achieving a grade of C or higher in each course taken in the outside field

This degree combines a major in music with an opportunity to study in one of many available non-music areas, such as business, communication, electrical engineering technology, psychology, or the sciences. Some outside fields have specific course requirements. Students should consult with an advisor in the Department of Music for this information. Some outside fields require a 3-credit internship as a part of the outside field hours, and others offer the internship as an option. Consult with your advisor. Ensemble participation is not required during the semester of internship.

To earn the B.S. in Music and an Outside Field, one must satisfy the requirements of IPFW (see Part 8) and the music core, and complete the courses listed below. Credits required in the outside field must be approved in writing by an appropriate faculty member in the outside-field program of study. A record of this approval from the outside-field department will be kept as a part of your permanent file. A maximum of 6 credits in the outside field may be taken with the pass/not-pass option. An overall GPA of 2.50 or higher must be maintained in the outside field and is required for graduation. A course with a grade lower than C will not be counted toward outside-field course requirements.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z140 to fulfill Area V requirements

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-31

Applied Primary (includes recital) Credits: 14-16

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7-8 semesters)

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X301 - Recital: Concentration Level

Concurrent enrollment in 300-level applied study on an instrument of concentration. Public performance of 25-50 minutes of assigned literature, with a minimum of 25 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296 and minimum of two completed semesters of post-Upper Division study; B.S.M.T. majors are required a minimum of one completed semester of post-Upper Division study.

Cr. 0.

Applied Secondary Credits: 4-7

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 7-8

Outside Field Credits: 26-30

Some outside fields include in this credit range a 3-credit internship. These outside fields require only seven semesters of ensemble participation; consult your advisor.

Other Requirements

- Free electives Credits: 4-9

Total Credits: 130

Music Education (B.Mus.Ed)

Program: B.Mus.Ed.

Department of Music

College Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi

Music Competencies.

Students in all teaching concentrations will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for P-12 general music
- competency sufficient to compose, arrange, and adapt music from a variety of sources to meet the needs and abilities of school performance groups and classes
- functional performance ability in keyboard and voice
- competency in transposing and improvising piano accompaniments for classroom music activities
- competency in applying analytical and historical knowledge to curriculum development, lesson planning, and classroom and performance activities

Vocal/general concentration. Students will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for vocal music
- skill in singing and playing parts from a choral score as required in a choral rehearsal
- vocal skill and technique sufficient to teach effective use of the voice

Instrumental/general concentration. Students will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for instrumental music
- knowledge of and performance ability on wind, string and percussion instruments sufficient to teach beginning students
- skill in transposing instrumental music

Teaching competencies. Students in all teaching concentrations will demonstrate:

- understanding of the philosophical, historical, social and psychological foundations of music education
- understanding of child growth and development and the principles of learning as they relate to music education
- ability to teach music to a variety of age groups in a variety of classroom and ensemble settings, including skill in effective management of classes and rehearsals
- ability to assess the aptitudes and experiences of individuals and groups of students, and to plan learning to meet the assessed needs.
- ability to apply appropriate rehearsal techniques and procedures to the planning, organization, and implementing of effective rehearsals
- understanding of evaluative techniques and the ability to apply appropriate measures in assessing the musical progress of students and in evaluating materials, objectives and procedures of the curriculum
- ability to work productively in the educational system, maintaining positive relationships and empathizing with students and colleagues of different backgrounds

- ability to articulate a rationale for music as a core component in a well-rounded education, and to effectively advocate for a music program to parents, professional colleagues and administrators

The music-education program provides preparation for teaching music in grades K–12. One may choose to concentrate in choral/general music education, or instrumental/general music education. Upon satisfactory completion of this program, one is eligible to apply for an Indiana teaching license in the appropriate concentration.

To earn the B.Mus.Ed., one must satisfy the requirements of IPFW (see Part 8), the music core, and the School of Education (see Part 4) and satisfactorily complete all music and professional education courses with a grade of C or better.

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z140 to fulfill Area V requirements

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-28

Applied Primary (includes recital) Credits: 14

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

Applied Secondary Credits: 4-7

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X301 - Recital: Concentration Level

Concurrent enrollment in 300-level applied study on an instrument of concentration. Public performance of 25-50 minutes of assigned literature, with a minimum of 25 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296 and minimum of two completed semesters of post-Upper Division study; B.S.M.T. majors are required a minimum of one completed semester of post-Upper Division study.

Cr. 0.

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensemble Credits: 7

Professional Music Courses Credits: 13

MUS K312 - Arranging for Instrumental and Vocal Groups

Fundamentals of orchestrations, arranging and scoring for orchestra, band, and chorus.

Preparation for Course

P: T214, T216, U109.

Cr. 2.

MUS M216 - Music Education Lab/Field Experience

Taken concurrently with M236. Field experiences and observations in vocal and instrumental music program K-12.

Cr. 0.

MUS M236 - Introduction to Music Education

An overview of the music education profession, including the study of philosophical and historical foundations of music teaching and learning. Includes examination of curriculum and current issues in music education.

Cr. 2.

MUS M319 - Music Education Lab/Field Experience

Taken concurrently with M339. Field experiences and observations in elementary general music.

Cr. 0.

MUS M339 - General Music Methods K-8

Must be taken concurrently with M319. The study of curriculum, methods, and materials for the elementary general music program. Includes sequential planning of lessons, introduction to important methodologies, and directing the elementary-age choir.

Preparation for Course

P: T214, T216, V201(if applicable), X296, X297, X299.

Cr. 2.

MUS U357 - Music in Special Education

Introduction to teaching music to special needs students including those with cognitive, physical, behavioral, and emotional disabilities. Development of skills in planning and structuring experiences to facilitate appropriate participation of students in the K-12 classroom. Overview of various disabilities and historical, cultural, and ethical issues. Participation in experiential music lessons and simulations; field observations of special needs students in music education.

Preparation for Course

P: X297.

Cr. 3.

MUS X297 - Music Education Upper Divisional Skills Examination

An oral examination of knowledge and professional development for the purpose of evaluating progress toward the Bachelor of Music Education.

Preparation for Course

P: T214, T216, X296, M236, W200, W313, and math requirement.

Cr. 0.

Professional Music Concentration Courses Credits: 11-12

Choral and General Music

MUS E494 - Voice Pedagogy

Survey and analysis of various aspects of vocal pedagogy, including the physiology of the vocal mechanism, vocal terminology, teaching methods, vocal health, and the relationship of the singing process to vocal artistry. Class will include student presentations, teaching demonstrations, and lab experience.

Preparation for Course

P: consent of instructor.

Cr. 3.

MUS G371 - Choral Conducting I

Further development of basic conducting technique with a concentration on choral concepts. Emphasis on period style elements, analytical listening, aspects of choral tone, text analysis, score preparation, rehearsal planning, vocal techniques, and other advanced problems in choral conducting. Conduct representative works from varying style periods.

Preparation for Course

P: G370.

Cr. 2.

MUS M318 - Music Education Lab/Field Experience

Taken concurrently with M338. Field experiences and observations in choral music education.

Cr. 0.

MUS M338 - Methods and Materials for Teaching Choral Music

Development and organization of administration of choral music programs in the middle and secondary school. Emphasis on auditioning and placement, vocal production, rehearsal techniques, and appropriate choral literature.

Preparation for Course

P: T214, T216, V201 (if applicable), X296, X297, X299. Must be taken concurrently with M318.

Cr. 2.

MUS U233 - Applied French Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U243 - Applied German Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U253 - Applied Italian Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U361 - English Diction for Singers

Drill on phonetics with application to song and opera.

Cr. 1.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

(nonvocal concentrates only)

Music Education Electives: 2

Instrumental and General Music

MUS G373 - Instrumental Conducting

Further development of score reading and conducting techniques. Emphasis on experience conducting live instrumental ensembles.

Preparation for Course

P: G370.

Cr. 2.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

MUS M317 - Music Education Lab/Field Experience

Taken concurrently with M337. Field experiences and observations in instrumental music education.

Cr. 0.

MUS M337 - Methods and Materials for Teaching Instrumental Music

Must be taken concurrently with M317. Development and organization of instrumental music programs, including methods and materials, rehearsal techniques, and a survey of band and orchestra literature.

Preparation for Course

P: T214, T216, X296, X297, x299; three of the following: G261, G272, G281, G337, G338.

Cr. 2.

Four of the following (excluding primary instrument) Credits: 4

MUS G261 - String Techniques

Class instruction and teaching methods for developing proficiency on violin, viola, violoncello, and double bass.

Cr. 1-2.

MUS G272 - Clarinet and Saxophone Techniques

Class instruction for developing proficiency on clarinet and saxophone. Study of methods and materials for teaching these two instruments in class or private lessons.

Cr. 1-2.

MUS G281 - Brass Instrument Techniques

Class instruction for developing proficiency on trumpet, French horn, trombone, euphonium, and tuba. Study of methods and materials for teaching brass instruments in class or private lessons.

Cr. 1-2.

MUS G337 - Woodwind Techniques

Class instruction and teaching methods for flute, oboe, and bassoon.

Cr. 1-2.

MUS G338 - Percussion Techniques

Class instruction to learn the rudiments of snare drum, tympani, and mallet instruments. Study of methods and materials for teaching percussion instruments in class or private lessons.

Cr. 1-2.

Music Education Electives: 5

Professional Education Courses Credits: 22

A GPA of 2.5 is required.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M482 - Student Teaching: All Grades

Full-time supervised student teaching in music at the elementary, junior high/middle school, and/or high school level in an accredited school within Indiana.

Cr. 1-16.

Notes

Additional fee.

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Portfolio Cr. 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC P254 - Educational Psychology for Teachers of All Grades

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Total Credits: 137–141

Music Performance (B.Mus.)

Program: B.Mus.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Performance majors will demonstrate:

- the ability to work independently to prepare performances at a high level of quality
- knowledge of applicable solo and ensemble literature
- orientation to and experience with the fundamentals of pedagogy

Piano performance majors will demonstrate:

- ability to perform as a soloist, an accompanist and/or chamber musician
- ability to function as an accompanist
- ability to play in chamber ensembles

Vocal performance majors will demonstrate:

- ability to perform as a soloist
- ability to perform operatic roles
- ability to perform in choral ensembles

Instrumental performance majors will demonstrate:

- ability to perform as a soloist
- ability to perform in chamber ensembles
- ability to perform in large ensembles

The Bachelor of Music program provides an opportunity to earn a performance degree in voice, winds, strings, piano, or percussion.

To earn the Bachelor of Music, one must satisfy the requirements of IPFW (see Part 8) and the music core, and satisfactorily complete the following courses, and earn a grade of C or better in each music course.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- Music majors may not use MUS Z140 to fulfill Area V requirements
- Vocal Performance Majors must take THTR 134

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 32

Applied Primary (includes recital) Credits: 16

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For

further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

Applied Secondary Credits: 4-7

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(8 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X401 - Junior Recital: Performance Major

Public performance of 30-50 minutes of assigned literature, with a minimum of 20 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296. Concurrent enrollment in 400-level study on major instrument.

Cr. 0.

MUS X402 - Senior Recital: Performance Major

Concurrent enrollment in 400-level applied study on major instrument. Public performance of 40-60 minutes of assigned literature prepared after junior recital. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X401 and one completed semester of applied study after X401.

Cr. 0.

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 8

Piano Performance majors take major ensembles for 6 semesters and

MUS X002 - Piano Accompanying

Study of the art and practice of accompanying singers and instrumentalists. Areas covered include sight-reading, ensemble playing, coaching techniques, style and interpretation, transposition, and score reading.

Preparation for Course

P: Consent of instructor.

Cr. 1-2.

for 2 semesters

Professional Music Courses and Free Electives Credits: 26

Piano Majors (26 credits)

- Piano ensemble/piano chamber ensemble Credits: 2
- Keyboard literature Credits: 6
- Piano pedagogy Credits: 3
- Electives in music Credits: 6
- Free electives Credits: 9
- *Voice Majors (26 credits)*
- Song literature Credits: 3
- Foreign language Credits: 8
- Diction Credits: 4
- Vocal pedagogy Credits: 3
- Opera Ensemble Credits: 2
- Elective credits in music Credits: 3
- Free electives Credits: 3

Instrumental Majors (26 credits)

- Instrumental literature Credits: 3
- Instrumental pedagogy Credits: 2
- Additional ensembles Credits: 6
Refer to *Department of Music Handbook*
- Elective credits in music Credits: 6
- Free electives Credits: 9

Total Credits: 120-123

Music Therapy (B.S.M.T.)

Program: B.S.M.T.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.

- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Music Foundations. Students will demonstrate general musicianship, as well as specific music knowledge and skills, sufficient to appropriately and effectively apply a wide variety of music interventions within the clinical setting including the following:

- recognition of standard works from various periods and cultures, and identification of their elemental, structural and stylistic characteristics
- sight-singing transposing and aural dictation of melodies, rhythms and chord progressions
- composing songs and simple instrumental pieces in a variety of styles with simple accompaniments
- adapting, arranging, transposing, and simplifying compositions for vocal and non-symphonic instrumental ensembles
- performing appropriate undergraduate repertoire, and demonstrating musicianship, technical proficiency, and interpretive understanding on a principle instrument/voice
- functional keyboard skills including accompanying, sight-reading and transposition skills for a basic repertoire of traditional, folk and popular songs and musical styles
- functional guitar skills including accompanying, sight-reading and transpositions skills for a basic repertoire of traditional, folk, and popular songs and musical styles
- functional vocal skills for singing a basic repertoire of traditional, folk and popular songs and musical styles and for vocally leading group singing
- utilizing a variety of non-symphonic and ethnic instruments and percussion for accompanying and leading group singing and playing
- improvise on non-symphonic and ethnic instruments and percussion in a wide variety of styles and moods for accompaniment and group playing
- conducting small and large vocal and instrumental ensembles

Clinical Foundations. Students will demonstrate an understanding of and ability to integrate philosophies, orientations, theories and techniques of traditional therapies into clinical music therapy practice, including the following:

- understanding of the general populations and specific disability and diagnostic groups to which music therapy clients typically belong, including:
 - causes and symptoms of major exceptionalities
 - basic terminology and diagnostic classifications
 - potentials, limitations and problems of exceptional individuals
- understanding of human development throughout the life span, including major theories of development
- basic knowledge of the major schools of thought and their accepted methods of therapeutic interventions
- demonstrate an understanding of basic group process within therapeutic environments
- utilize the dynamics of group process to address therapeutic goals
- develop a depth of self-awareness that allows for the establishment of ethically appropriate and effective therapeutic relationships

Music Therapy. Students will demonstrate an understanding of, and ability to integrate and practice music therapy-specific concepts and skills in preparation for effective provision of clinical music therapy services to clients in a manner which adheres to professional standards of clinical practice and to ethical code, including the following:

- basic knowledge of music therapy methods, techniques, materials and equipment and their appropriate applications, as appropriate to a variety of client populations and settings
- application of the philosophical, psychological, physiological and sociological bases for the use of music as therapy
- application of the principles and methods for evaluating the effectiveness of music therapy
- communication of a basic understanding of the concepts, processes, methods and techniques, cultural implications, and analyses and interpretations of music therapy assessment
- a basic understanding of the process of formulating and focusing music therapy treatment plans in response to the strengths, weakness, needs, and socio-cultural contexts of individuals and groups
- ability to apply music therapy treatment in response to the strengths, weakness, needs, and socio-cultural contexts of individuals and groups
- ability to creatively utilize a wide variety of musical intervention, including use of voice, solo, and accompaniment instruments, pitched and non-pitched percussive instruments, pre-composed music, and recorded music, in order to effectively address clients' treatment objectives
- creativity and flexibility in responding to client needs as they are presented within the music therapy session
- effective use of therapeutic self within the music therapy session in order to shape client behavior and increase client communication
- effectively communicate, verbally and in writing, all aspects of the clinical process, including, assessment, planning, implementation, outcomes, and evaluation
- attitudes and behaviors that reflect the standards and ethical codes required of the music therapy professional
- basic knowledge of quantitative, qualitative and historical research in music therapy, and its implications for and applications to music therapy clinical practice.

Music therapists use music and music activities to promote health and rehabilitation for individuals of all ages with disabilities in a variety of agencies such as hospitals, schools, rehabilitation centers, and private practice settings. Students must satisfactorily complete a six-month internship at the conclusion of the required course work. Graduates of the B.S.M.T. program are eligible to sit for the national certification exam sponsored by the Certification Board for Music Therapists. Music therapy majors must work closely with an advisor to select general education courses that meet national certification requirements. Bachelor of Science in Music Therapy (B.S.M.T.) candidates have some specific general education courses in some categories.

Gerontology

For information about earning an undergraduate certificate in gerontology concurrently with the B.S.M.T., consult the gerontology program entry in this section of this Bulletin. Additional information is published in the *Department of Music Student Handbook*.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Area III—The Individual, Culture, and Society Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

Music majors may not use MUS Z140 to fulfill Area V requirements

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-28

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

Applied Primary (includes recital) Credits: 14

- MUS X269 - Upper Divisional Exam Credits: 0

Applied Secondary Credits: 4-7

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 7

Professional Music Therapy Courses Credits: 28

MUS E253 - Functional Music Skills

Overview of musical skills based on AMTA professional competencies. Areas addressed will include simple composition and arranging skills, keyboard skills, guitar skills, voice skills, non-symphonic instrumental skills, and

improvisation. Involves application of functional music skills through role-playing and implementation of instruments in practicum sessions.

Preparation for Course

P: permission of instructor.

Cr. 2.

Session Indicators

(spring)

MUS L253 - Music Therapy Observation Practicum

Observation of professional music therapy sessions in a variety of settings with client populations of varying needs.

Preparation for Course

P: L153.

Cr. 1.

Session Indicators

(fall)

MUS L254 - Music Therapy Practicum I

Students provide services to music therapy clients at the campus clinic with focus on the assessment process. Involves clinical hours and attendance at weekly seminar. May be repeated. Liability insurance required.

Preparation for Course

P: L253, U355, concurrent enrollment in L420.

Cr. 1.

Session Indicators

(spring)

MUS L340 - Music Therapy in Healthcare Settings

Study of music therapy methods and materials commonly used in assessment and treatment of children, adults, and the elderly in healthcare settings, with emphasis on stress management, relaxation, rehabilitation, and pain management.

Preparation for Course

P: X296, X298, or permission of director of Gerontology Program or director of Music Therapy Program.

Cr. 3.

Session Indicators

(spring, even years)

MUS L353 - Music Therapy Practicum II

Students provide services to elderly/geriatric individuals or groups focusing on the development of treatment interventions and plans. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L254, X296, C298.

Cr. 1.

Session Indicators

(fall)

MUS L354 - Music Therapy Practicum III

Students provide music therapy services to physically/mentally disabled clients with emphasis on the process of assessment, treatment, and evaluation. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L353.

Cr. 1.

Session Indicators

(spring)

MUS L410 - Administrative and Professional Issues in Music Therapy

Study of government and professional guidelines that influence music therapy services and documentation practice. Includes development of administrative skills such as proposal writing, public relations, budgeting, staff relationships, interviewing, program development, and professional standards and ethics.

Preparation for Course

P: X296, X298, L421.

Cr. 3.

Session Indicators

(spring)

MUS L418 - Psychology of Music

Introduction to the physical, psychological, and physiological aspects of sound and music. Survey of the theories related to sound production, acoustics, music perception and learning, and the effects of sound and music on the behavior of humans. Overview of music psychology research, and the scientific method and research techniques.

Preparation for Course

P: junior standing or permission of instructor.

Cr. 3.

Session Indicators

(spring, even years)

MUS L419 - Introduction to Music Therapy Research Methods

Survey of current music therapy research including quantitative, qualitative, and historical literature with focus on underlying philosophies of research, research design, validity and reliability, and research ethics. Development of skills in defining research questions, reviewing literature, basic analysis and interpretation of data, and application of research to clinical practice.

Preparation for Course

P: X296, X298 or permission of instructor.

Cr. 3.

Session Indicators

(fall, odd years)

MUS L420 - Clinical Processes in Music Therapy

Introduction to processes, principles, and concepts required to conduct music therapy with clients according to AMTA Standards of Clinical Practice. Includes the influence of music on behavior and applied behavioral analysis. Emphasis on assessment, documentation, outcomes measurement, treatment planning, and evaluation.

Preparation for Course

P: L153, U355; concurrent enrollment in MUS L254.

Cr. 3.

Session Indicators

(spring)

MUS L421 - Music Therapy Practicum IV

Students provide music therapy services to psychiatric/mentally ill clients or groups focusing on the process of assessment, treatment, and evaluation. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: MUS L354.

Cr. 1.

MUS L422 - Music Therapy Theories and Techniques

Study of philosophies, theories, and techniques of various music therapy, music education, and counseling models including Analytic, Creative, and Orff music therapy. Emphasis on the integration of models to develop personal philosophies and theories of music therapy practice.

Preparation for Course

P: X296, X298.

Cr. 3.

Session Indicators

(fall, even years)

MUS L424 - Music Therapy Internship

Acceptance to internship program required prior to registration. A six-month internship completed under the supervision of a professional and credentialed music therapist at an AMTA approved clinical site. Course must be completed within two years of the completion of all course work. Internship must be completed before conferring of the degree. Liability insurance required.

Preparation for Course

P: All degree-required course work must be successfully completed prior to registration.

Cr. 1-2.

Session Indicators

(fall, spring, summer)

MUS U355 - Music and Exceptionality

Basic accompaniment skills on the autoharp, guitar, or piano are desirable prerequisites. Focus on designing, planning, and implementing music-based interventions for individuals with diverse abilities with an emphasis on music leadership, instructional and facilitation skills. Incorporates a wide variety of music therapy applications for children and adolescents, and covers the role of music in special education including historical and legal precedents, learning styles, and the IEP process.

Preparation for Course

P: E153 or the equivalent experience; sophomore standing or permission of the instructor.

Cr. 4.

Session Indicators

(fall)

MUS X298 - Music Therapy Upper Divisional Skills Examination

To be taken concurrently with or after successful completion of X296. A written application and oral examination of observation techniques, clinical music therapy skills, and functional music and accompaniment skills. This test is an evaluation of progress toward the Bachelor of Science in Music Therapy. Required of all music therapy majors and equivalency students.

Preparation for Course

P: L153, L420, U355, application to the IPFW Music Therapy Practicum Program, permission of instructor.

Cr. 0.

Additional Requirements Credits: 7

MUS K312 - Arranging for Instrumental and Vocal Groups

Fundamentals of orchestrations, arranging and scoring for orchestra, band, and chorus.

Preparation for Course

P: T214, T216, U109.

Cr. 2.

MUS L100 - Guitar

Cr. 1.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

General Electives Credits: 6

The following courses are recommended as general electives:

- HSRV 210 or HSRV 211

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

or

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

MUS E353 - Orff and Percussion Techniques for Music Therapy

Techniques of using music, movement, dance, improvisation in music therapy situations. Emphasis on adaptation of Orff music education and percussion techniques for use with special populations and inclusive classrooms. Includes integration of Orff skills with other music therapy techniques.

Preparation for Course

P: X298, E 253.

Cr. 1-6.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

or

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

or

SOC S331 - Sociology of Aging

Social aspects of aging and older adulthood. Topics include myths about aging; the process of aging, sexual behavior, social relationships, family relationship, religious activities, and leisure of the elderly.

Preparation for Course

P: SOC S161; either ENG W233 or SOC 260 (or equivalent); or consent of instructor.

Cr. 3.

Total Credits: 132–135

Note

Music therapy majors must have at least seven courses in the behavioral/health/natural sciences. General electives may include courses required for the gerontology certificate program, a minor in psychology, or other program minor. See *Department of Music Handbook* for more options and further information.

Nursing (B.S.)

Program: B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy. student learning outcome
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills.
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

Career Steps

As a graduate of an IPFW pre-licensure nursing program, students will have attained the knowledge and skills needed to provide quality healthcare and the academic credentials required to take the National Council Licensure Examination (NCLEX-RN). Upon successful completion of this examination, the student will be eligible to practice as a registered nurse. The baccalaureate degree (B.S.) graduate is prepared at the professional level to function in a leadership role with other team members in varied and complex healthcare settings.

IPFW General Education Requirements

Area I-Linguistic and Numerical Foundations

- Statistic - *See Part 2 General Education Requirements for approved courses*

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II-Natural and Physical Sciences

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III-The Individual, Culture, and Society (Credits: 6)

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

or

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV-Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V-Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI-Inquiry and Analysis (Credits: 3)

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

Program Requirements

B.S. Core Credits: 73

- NUR (elective) Credits: 3

NUR 103 - Professional Seminar I: Communications, Ethics and Diversity

Introduction to the role of the registered nurse involving history of nursing, professionalism, code of ethics, cultural sensitivity, and therapeutic communication. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are initiated.

Preparation for Course

P: ENG W131

Cr. 2.

NUR 115 - Nursing I: Introduction to Nursing

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Explores the concepts of health, illness, individuals' pursuit of wholeness, and nursing intervention through the use of the nursing process. Basic human needs, interpersonal relationships, and dynamics of behavior as they apply to the Neuman Systems Model are studied. Laboratory experience is provided in the clinical setting.

Preparation for Course

P or C: CHM 112 or CHM 104, BIOL 204, NUR 103, PCTX 201; C: NUR 130.

Cr. 5.

Hours

Class 4, Lab. 6,

NUR 130 - Essential Clinical Skills

Introduction to clinical skills and procedures required for safe nursing practice through the use of demonstration, return demonstration, "hands-on" practice, and critical thinking exercises. Independent practice time is required.

Preparation for Course

P: or C: NUR 103, BIOL 204, PCTX 201; C: NUR 115.

Cr. 2.

NUR 202 - Nursing II: Medical-Surgical Nursing of Adults

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Applies the nursing process to the care of adults who experience problems related to selected basic human needs. Surgical intervention as a stress situation is studied. Laboratory experiences are provided in hospitals and other community agencies.

Preparation for Course

P: BIOL 204, NUR 115, PCTX 201; C: BIOL 220.

Cr. 6.

Hours

Class 4, Lab. 6.

NUR 241 - Psychiatric Mental Health Nursing B

This didactic and clinical nursing course introduces concepts specific to the care of patients/clients experiencing alterations with mental health. The study of personality development, psychology, and sociologic concepts from previous social science and nursing courses are integrated throughout the course. The assessment, application of the nursing process, critical thinking, communication skills, and therapeutic use of self are emphasized specific to the related psychopathology. Clinical experiences are provided in hospitals and other community mental health agencies.

Preparation for Course

P: NUR 115 or P: or C: NUR 117.

Cr. 4.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 336 - Nursing IIIB: Medical-Surgical Nursing of Adults

This course utilizes the nursing process in caring for clients who experience complex problems related to selected basic human needs. Laboratory experiences are provided in hospitals and other community-related agencies.

Preparation for Course

P: NUR 202; P: or C: NUR 117, 334, 346, FNN 303.

Cr. 7.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters or normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with

the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 368 - Maternity Nursing B

Applies the nursing process and an eclectic nursing theory model in caring for the emerging family group throughout the maternal cycle. Laboratory experiences are provided in hospitals. The student will be involved with community agencies offering care to the pregnant family.

Preparation for Course

P: NUR 202 or C: 117.

Cr. 3.

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 379 - Caring for Children and Families B

Emphasizes the role of the nurse in assisting children and families of all cultural backgrounds in health promotion, maintenance, and restoration. Utilizes critical thinking, culturally sensitive age-appropriate communication, technical skills, leadership/management skills, growth and development concepts, and the nursing process to care for children with diseases unique to childhood. Laboratory experiences focus on pediatric healthcare in the community, as well as the acute care setting.

Preparation for Course

P: NUR 336; C: FNN 303.

Cr. 3.

Hours

Class 2, Lab. 3,

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates

and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C:NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 433 - Advanced Concepts in Critical Thinking

This course will help students apply advanced concepts in critical thinking. Teaching strategies challenging the learner to apply critical thinking include the use of scenarios, integrations of computer-assisted learning, and exploration of effective healthcare delivery. Computerized testing is utilized to prepare students for NCLEX-RN examination. This course must be taken the last semester of the baccalaureate degree program.

Preparation for Course

P: NUR 418, 442; C: NUR 419.

Cr. 1.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 pr 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

Supporting Course Credits: 49

- Credits in communication at the 300-400 level Credits: 3
- Credits in humanities (General Education IV) Credits: 6
- Credits in elective (General Education V) Credits: 3

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PCTX 201 - Introductory Pharmacology

An introduction to the pharmacological basis of therapeutics. This course involves an integration of knowledge of anatomy, physiology, microbiology, and chemistry with the biological and selected chemical and physical actions and reactions of drugs. Primarily for students in nursing and other paramedical programs.

Preparation for Course

P: BIOL 203 or equivalent, CHM 104 or equivalent; C: BIOL 204 or equivalent.

Cr. 3-4.

Session Indicators

(fall, spring, summer)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose from the following Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

Total Credits: 122

Nursing (LPN - B.S.)

Program: LPN - B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy.
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

LPN Mobility

Criteria for LPN Applicants

LPN to RN Mobility Track Seminar will be offered spring semester only. LPN applicants must meet the following requirements:

- Hold a current LPN license prior to beginning NUR 336 Nursing IIIB: Med-Surg Nursing of Adults.
- Be admitted to IPFW as a degree seeking student.
- Be a graduate of an NLNAC or equivalent accredited practical nursing program.
- Have a minimum GPA of 3.0 or higher upon graduation from the LPN program.
- A minimum GPA does not guarantee admission. The actual GPA necessary for admission varies with the GPA distribution of the applicant pool and the number of available slots for admission.
- Have completed at least 8 credit hours of anatomy and physiology within five years of application.
- Have completed CHM 104 or equivalent chemistry within 10 years of application.
- Have completed BIOL 220 or equivalent biology within 5 years of application.
- Have credit or accepted transfer credit in the 24 credit hours of identified pre-nursing curriculum with a grade of C or better in each course. Courses may be repeated only one time. Pre-nursing curriculum:
 - PSY 120
 - BIOL 220
 - ENG W131
 - CHM 104 (equivalent CHM 111 and 112)
 - BIOL 203 and BIOL 204
 - COM 114
- Applicants are required to take an Pre-Admission Examination. The examination is administered on specific dates and at specific times. Applicants pay a testing fee.
- Students who earn a grade of "C" or better in NUR 117 and NUR 336 will be awarded an additional 13 credit hours for the first year nursing courses. Student may take NUR 241 prior to NUR 336, but the awarding of the 13 credit hours does not occur until successful completion of NUR 117 and NUR 336.
- Students not successful in NUR 117 and NUR 336, will not be granted the 13 credit hours for the first year nursing courses and will need to successfully complete NUR 202 to continue in the nursing program.

Criteria for Dismissal from Pre-Nursing / Ineligibility for Admission to Nursing

- A student who earns two grades below C in the same or any combination of 2 courses required in the pre-nursing curriculum will be ineligible for program admission for a period of five years after earning the last grade below C.

NOTE: Students who have previously been dismissed from the IPFW Nursing program, or any nursing degree program, and return under the above LPN admission will be dismissed from the program with a failure of any course required in the nursing curriculum.

LPN - B.S. Credit Awarded

A student who earns a grade of C or better in NUR 117 and NUR 336 will be awarded an additional 13 credit hours for the following first-year nursing courses:

NUR 115 - Nursing I: Introduction to Nursing

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Explores the concepts of health, illness, individuals' pursuit of wholeness, and nursing intervention through the use of the nursing process. Basic human needs, interpersonal relationships, and dynamics of behavior as they apply to the Neuman Systems Model are studied. Laboratory experience is provided in the clinical setting.

Preparation for Course

P or C: CHM 112 or CHM 104, BIOL 204, NUR 103, PCTX 201; C: NUR 130.

Cr. 5.

Hours

Class 4, Lab. 6,

NUR 130 - Essential Clinical Skills

Introduction to clinical skills and procedures required for safe nursing practice through the use of demonstration, return demonstration, "hands-on" practice, and critical thinking exercises. Independent practice time is required.

Preparation for Course

P: or C: NUR 103, BIOL 204, PCTX 201; C: NUR 115.

Cr. 2.

NUR 202 - Nursing II: Medical-Surgical Nursing of Adults

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Applies the nursing process to the care of adults who experience problems related to selected basic human needs. Surgical intervention as a stress situation is studied. Laboratory experiences are provided in hospitals and other community agencies.

Preparation for Course

P: BIOL 204, NUR 115, PCTX 201; C: BIOL 220.

Cr. 6.

Hours

Class 4, Lab. 6.

Program Requirements

LPN - B.S. Core Credits: 61

- NUR (elective) Credits: 3

NUR 103 - Professional Seminar I: Communications, Ethics and Diversity

Introduction to the role of the registered nurse involving history of nursing, professionalism, code of ethics, cultural sensitivity, and therapeutic communication. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are initiated.

Preparation for Course

P: ENG W131

Cr. 2.

NUR 117 - LPN Nursing Mobility Seminar

LPN Nursing Mobility Seminar is designed to meet the specific needs of the licensed practical nurse (LPN) pursuing educational requirements necessary for an Associate of Science in nursing and for registered nurse (RN) licensure examination. The NUR 117 Seminar course offers increased depth to the existent knowledge and experience of the LPN with emphasis on the Neuman Systems Model (NSM) and the nursing process. Therapeutic communication skills are reviewed. Information regarding intravenous therapy and blood product transfusion is included. Demonstration of computer skills and knowledge of pharmacology are also incorporated. Students may take NUR 224 or NUR 336 with NUR 117.

Preparation for Course

P: 24 credit hours in General Education

Cr. 1.

NUR 241 - Psychiatric Mental Health Nursing B

This didactic and clinical nursing course introduces concepts specific to the care of patients/clients experiencing alterations with mental health. The study of personality development, psychology, and sociologic concepts from previous social science and nursing courses are integrated throughout the course. The assessment, application of the nursing process, critical thinking, communication skills, and therapeutic use of self are emphasized specific to the related psychopathology. Clinical experiences are provided in hospitals and other community mental health agencies.

Preparation for Course

P: NUR 115 or P: or C: NUR 117.

Cr. 4.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 336 - Nursing IIIB: Medical-Surgical Nursing of Adults

This course utilizes the nursing process in caring for clients who experience complex problems related to selected basic human needs. Laboratory experiences are provided in hospitals and other community-related agencies.

Preparation for Course

P: NUR 202; P: or C: NUR 117, 334, 346, FNN 303.

Cr. 7.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters or normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 368 - Maternity Nursing B

Applies the nursing process and an eclectic nursing theory model in caring for the emerging family group throughout the maternal cycle. Laboratory experiences are provided in hospitals. The student will be involved with community agencies offering care to the pregnant family.

Preparation for Course

P: NUR 202 or C: 117.

Cr. 3.

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 379 - Caring for Children and Families B

Emphasizes the role of the nurse in assisting children and families of all cultural backgrounds in health promotion, maintenance, and restoration. Utilizes critical thinking, culturally sensitive age-appropriate communication, technical skills, leadership/management skills, growth and development concepts, and the nursing process to care for children with diseases unique to childhood. Laboratory experiences focus on pediatric healthcare in the community, as well as the acute care setting.

Preparation for Course

P: NUR 336; C: FNN 303.

Cr. 3.

Hours

Class 2, Lab. 3,

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when

planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C:NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 433 - Advanced Concepts in Critical Thinking

This course will help students apply advanced concepts in critical thinking. Teaching strategies challenging the learner to apply critical thinking include the use of scenarios, integrations of computer-assisted learning, and exploration of effective healthcare delivery. Computerized testing is utilized to prepare students for NCLEX-RN examination. This course must be taken the last semester of the baccalaureate degree program.

Preparation for Course

P: NUR 418, 442; C: NUR 419.

Cr. 1.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 pr 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

NUR Elective

- NUR (elective) Credits: 3

Supporting Course Credits: 49

- Credits in COM - 300-400 level Cr. 3.

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PCTX 201 - Introductory Pharmacology

An introduction to the pharmacological basis of therapeutics. This course involves an integration of knowledge of anatomy, physiology, microbiology, and chemistry with the biological and selected chemical and physical actions and reactions of drugs. Primarily for students in nursing and other paramedical programs.

Preparation for Course

P: BIOL 203 or equivalent, CHM 104 or equivalent; C: BIOL 204 or equivalent.

Cr. 3-4.

Session Indicators

(fall, spring, summer)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose from the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Total Credits: 110 + 13 earned additional awarded credits = 123

Nursing (RN - B.S.)

Program: RN B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy.
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills.
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

Career Steps

The Bachelor of Science completion (RN-BS) curriculum is uniquely designed for associate degree or diploma registered nurses, working full or part-time, who wish to step up to baccalaureate degree. It is designed to meet the student's professional goals in a flexible environment. Included in the program are two clinical practicums in a variety of acute, long-term, and community settings. Advising is personalized.

Nursing Program Admission Criteria

Admission into the RN-B.S. nursing program requires that the applicant be a graduate of a state-accredited associate degree or diploma program in nursing and have a minimum cumulative GPA of 2.3 on a 4.0 scale. A current Indiana nursing license is required prior to taking the first clinical nursing course.

Credit required from the lower division includes:

- 34 credits nursing
- 15 credits in biological and physical sciences - must include 3 credits of chemistry
- 3 credits humanities (English)
- 6 credits behavioral sciences (psychology & sociology or anthropology).

Program Requirements

Credits from the A.S. in nursing: 58

Nursing Core Credits: 38

- NUR Elective 3 credits

NUR 442, NUR 418, and NUR 419: student may pick 2 of the 3 clinicals

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters or normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C:NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 pr 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

Supporting Courses Credits: 18

- Credits in communication at the 300-400 level Credits: 3
- Credits in humanities (General Education IV) Credits: 6
- Credits in elective (General Education V) Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Total Credits: 56

Organizational Leadership and Supervision (B.S.)

Program: B.S.**Division of Organizational Leadership and Supervision****College of Engineering, Technology, and Computer Science**

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will show an awareness of the cultural context of organizations and demonstrate their ability to work with diverse others.
- Students will be able to design, lead and participate in a multi-disciplinary team environment.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will be able to adapt to and to manage organizational transformations and to be informed and engaged participants in such processes.
- Students will demonstrate an understanding of the professional and ethical implications and responsibilities of leadership.
- Students will demonstrate effective oral and written communication skills.
- Students will be able to analyze and solve problems occurring within organizations.
- Students will be critical readers and better consumers of behavioral science research.
- Students will be able to examine their own behaviors and beliefs about organizations and contrast them with the theories and observations of others.
- Students will be able to manage their environment by planning for and using current technology, tools, and processes.

The bachelor's program focuses on leadership roles, the human relations concerns of supervisors and human resource issues. Courses emphasize current and future workplace topics, such as teamwork and work groups, facilitation skills, employee training and development, individual creativity and innovation, workforce diversity, employee health and safety, and overseeing change.

To earn the B.S. with a major in organizational leadership and supervision, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science, Division of Organizational Leadership and Supervision (see Part 4); earn a grade of C or better in ENG W131, ENG W233 (or approved substitute), and each OLS course; and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

OLS Core and Major Courses

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 474 - Conference Leadership

The practical application of presenting technical information and conducting problem-solving and decision-making conferences or meetings. Emphasis is placed on leading and facilitating interactive conferences as well as structuring information for effective presentations.

Preparation for Course

P: 375 and COM 114; junior or senior class standing.

Cr. 3.

OLS 475 - Topics: Contemporary Supervisory Training Issues

This course will build on the topics covered in OLS 375. Topics will include needs analysis, advanced training and development methods, techniques of evaluation, and meeting the job-training needs of special groups. Additional topics of special interest will be covered.

Preparation for Course

P: 375; junior or senior class standing.

Cr. 3.

OLS 485 - Leadership for Team Development

An in-depth study of self-directed work teams and team processes in the work setting with a view to understanding team functions under varying task conditions. Especially emphasized will be the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members.

Preparation for Course

P: 252 and 274; junior or senior class standing.

Cr. 3.

OLS 496 - Leading Change: Theory and Practice

This course is designed to assist students in integrating leadership theories and modeling change initiatives. A final synthesis project is required.

Preparation for Course

P: OLS 252 and senior class standing.

Cr. 3.

OLS Electives Credits: 9

See the OLS advisor for a list of approved OLS electives.

Technical Support Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

Choose from the following: Credits: 3

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

Choose from the following: Credits: 3

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions,

experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Concentration Credits: 21

In consultation with IPFW academic departments, OLS has compiled interdisciplinary career concentrations such as:

Human Resource Development

Human Resource Management

Environmental Health and Safety

Electrical Engineering Technology

Government

Health Services

Hotel, Restaurant, Tourism Management

Industrial Engineering Technology

Interior Design

Information Systems

Journalism

Public Relations

Quality Control

Service Industry

A minor may be substituted for the concentration. See the OLS academic advisor for additional information.

Unrestricted Electives Credits: 9

Total Credits: 123

Note

Lists of specific courses required for each career concentration are available at the OLS office (Neff 288). Other options for filling this requirement include using an IPFW-recognized minor as a basis for your concentration area or designing a concentration that reflects your own career goals. Your proposal for an alternative concentration and a formal plan of study must be accepted by an OLS faculty advisor and approved by the OLS chair. If your plan is approved, it will become a formal part of your degree requirements.

Special Academic Regulations for Organizational Leadership and Supervision Degree Programs

Transfer students and students planning to change their major to organizational leadership and supervision must have a GPA of 2.00 or higher to be admitted into the program. A cumulative GPA of 2.0 or above is also required to remain in the division.

OLS, business, and technical courses taken more than 10 years ago will not count towards your degree requirements.

Students receiving credit for cooperative education experience can use these credits as unrestricted electives only.

If you have not registered for degree-applicable courses as an IPFW OLS major for four consecutive semesters (excluding summer), you must satisfy the degree requirements specified in the IPFW Bulletin that includes your year of re-entry.

Philosophy (B.A.)

Program: B.A.

Department of Philosophy

College of Arts and Sciences

Classroom-Medical Building 23~ 260-481-6366 ~ www.ipfw.edu/phil

The student learning outcomes for the degree are as follows:

- Possess general knowledge and critical appreciations of western and non-western philosophical thought, its principles branches and their history.
- Acquisition and honing of close reading, creative writing, and critical thinking skills.

The major in philosophy is a traditional humanities and liberal-arts program covering the principal branches and divisions of philosophy including their history. The philosophy major is good preparation for graduate study in philosophy. The philosophy major also serves as a preprofessional program for the ministry, law, or health sciences. It is often encouraged for a student to be a double major in philosophy and something else.

To earn the Bachelor of Arts with a major in philosophy, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHIL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in PHIL)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Core and Concentration (Major) Courses

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

PHIL 450 - Symbolic Logic

Topics considered include advanced techniques of the logic of quantification, identity, and definite description, intuitive set theory, Russell's paradox, and modal logic.

Preparation for Course

P: 150 or consent of instructor.

Cr. 3.

Credits in two of the following: Credits: 6

PHIL 301 - History of Ancient Philosophy

A survey of Greek philosophy from its beginning in the Milesian school through the Presocratics to Plato and Aristotle.

Preparation for Course

P: PHIL 110

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 302 - History of Medieval Philosophy

A survey of the main trends and figures of medieval philosophy, with an emphasis on metaphysics, epistemology, and ethics. Readings (in English translation) may include Augustine, Boethius, Avicenna, Anselm, Abelard, Maimonides, Aquinas, Scotus, Ockham, and Suarez.

Preparation for Course

P: PHIL 110

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

Additional credits in PHIL courses, including one at the 500 level Credits: 9

General Elective Courses

Sufficient additional credits to bring the total to 124.

Total Credits: 124

Physics (B.S.)

Program: B.S.

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will investigate physical phenomena using multiple approaches
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms

This program helps you prepare for graduate study in physics or for careers in industry. You may also be interested in physical science teaching certification (listed separately in this Bulletin).

If you wish to transfer to physics from another degree program, you must have an average of C or better in all physics and mathematics courses you have completed and not more than one grade below C in those courses.

To remain in the degree program, you must maintain a GPA of 2.0 or higher in physics courses. You may take a minor of 24–30 credits in a second science or in engineering. For this minor, a plan of study is developed with your advisor. You may substitute courses in the minor for PHYS 361. Typical minor programs chosen by physics majors are mathematics and electrical engineering.

To earn the B.S. with a major in physics, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

(credits included in Supporting Courses, below)

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Supporting Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHYS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

One of the following: Credits: 3

- Additional credits in mathematics

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Supporting Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Physics Teaching (B.S.)

Program: Physics Teaching B.S.

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms
- Will be aware of effective teaching techniques for physics
- Will be aware of appropriate physics laboratory methods

This program helps you prepare for teaching physical science in the high schools. You may also be interested in physical science teaching certification (listed separately in this Bulletin).

You should work closely with your academic advisor to ensure completion of general-education requirements for teacher certification. To be certified to teach, you must have a GPA of 2.0 or higher in the general-education areas of humanities and social and behavioral sciences. Additionally, you must have a GPA of 2.5 or higher in your major and

the professional-education course area with an overall GPA of 2.5 or higher. Each professional-education course must be completed with a grade of C or better.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam in physics must be completed before or during the student-teaching semester, normally in your senior year.

If you wish to transfer to physics teaching from another degree program, you must have an average of C or better in all physics and mathematics courses you have completed, and not more than one grade below C in those courses.

To earn the B.S. with a major in physics teaching, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Credits: 0

(credits included in Supporting Courses, below)

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Credits: 0

(credits included in Supporting Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Credits: 0

(credits included in Major Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHYS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements**English Writing****ENG W233 - Intermediate Expository Writing**

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses**PHYS 152 - Mechanics**

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See

information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Supporting Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Teacher Education Program Requirements

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area) Credits: 4

Total Credits: 125

Political Science (B.A.)

Program: B.A.

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- To have a basic and advanced knowledge of the discipline including major theories and approaches.
- To have an appreciation of the significance of and commitment to the American republic
- To have writing skills needed to communicate knowledge and ideas.
- To have a knowledge and historical understanding of texts and authors that have shaped political thought, speech, and practice.
- To be able to assess research and to determine its validity and to also be able to judge the appropriateness of the statistics used and of conclusions derived from such empirical research.
- To gain an appreciation of the diversity of political practices and forms of government that exist and to be able to compare these systems and different approaches.
- To have the knowledge of the international system and the political activities that occur within it.
- To be prepared to work in the political system (either directly in government or with parties and other organizations that are effectively part of the system) or with groups that work in the political system enabling them to critically analyze situations and engage in problem solving.
- To be prepared to be active and involved citizens in the local community, the nation, and beyond.
- To be prepared for employment in areas directly drawing upon their knowledge of the subject matter, including government service and teaching.
- To be prepared for graduate study in political science or related disciplines or for study at law school.
- To have access to practical work experience through internships and practicums to gain practical work experience.
- To instill in students the need to behave professionally, accept dissent collegially, to respect diversity, and to maintain an ethical approach to their course of study, their work, their role as citizens, and life in general.

To earn the B.A. with a major in political science, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition

sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in POLS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in POLS)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- POLS Yxxx - additional POLS credits, 100 level or above Cr: 6.
- POLS Yxxx - additional POLS credits, 200 level or above Cr: 15.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

POLS Y490 - Senior Seminar in Political Science

Open to senior majors and others with consent of instructor. Readings and discussion of selected problems; research paper ordinarily required. May be repeated once for credit with a different topic.

Preparation for Course

P: Y205 or consent of instructor.

Cr. 3.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in political science and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Notes

Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 credits for the major; these two courses together may not count for more than 9 credits for the major.

Psychology (B.A.)

Program: B.A.

Department of Psychology

College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate knowledge of the major theoretical approaches, findings, and historical trends in psychology.
- Students will demonstrate the ability to understand the major research methods in psychology, including ethical standards, design, data analysis, and interpretation.
- Students will demonstrate the ability to think critically and to use the scientific approach to understand behavior.
- Students will demonstrate the ability to apply concepts, information, and skills learned in psychology courses to their lives and work.
- Students will demonstrate the ability to effectively locate and evaluate sources of information.
- Students will demonstrate the ability to express themselves effectively in the discourse of the discipline.
- Students will demonstrate the ability to understand people from a diverse range of backgrounds and varying demographic characteristics such as age, race, disability, sexual orientation, class, ethnicity, religion, and cognitive abilities.
- Students will demonstrate the ability to make decisions about future employment or graduate education.

The Bachelor of Arts with a major in psychology is for the person seeking a career in psychology or a closely related field. The degree program provides a liberal-arts education in psychology as well as preparation for graduate school. A current IPFW student must have a cumulative GPA of 2.0 to declare psychology as a major. After two consecutively-enrolled semesters in which a psychology major's cumulative GPA falls below 2.0, the student will no longer be

eligible to be a psychology major. Two subsequent consecutive semesters with the cumulative GPA at or above 2.0 will permit a student to petition for reinstatement as a psychology major.

To earn the B.A. with a major in psychology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to fulfilling the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PSY) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing courses)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in PSY)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

PSY 100 - Introduction to the Science and Fields of Psychology

An introduction to psychology as a science and as a profession.

Preparation for Course

P: PSY 120; strongly recommended that course be taken within the first 13 credits in the major.

Cr. 1.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 203 - Introduction to Research Methods in Psychology

The use of scientific method in psychology. Lecture covers principles of collecting and interpreting data, using examples of research from many areas of psychology. In the laboratory portion, the student uses many different techniques from various areas of psychology.

Preparation for Course

P: PSY 201; R: ENG W233.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Three of the following: Credits: 9

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 and PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 and PSY 369

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

One of the following: Credits: 3

PSY 441 - Advanced Research in Personality and Social Psychology

In this course, students will have the opportunity to develop an advanced understanding of the principles, concepts, theories, and research methods used by personality and social psychologists. This course will demand a high level of student participation and responsibility in two broad ways. First, in place of standard lectures, students will be asked to actively participate in class discussions and demonstrations of central topics. Second, students will gain "hands-on" experience by conducting an empirical study pertaining to personality and social psychology, and by engaging in a

variety of laboratory exercises.

Preparation for Course

P: PSY 203, and one of the following: PSY 240, or PSY 420.

Cr. 3.

PSY 480 - Field Experience in Psychology

Supervised volunteer field work experiences in a setting appropriate to students' interests and goals. Intended as an opportunity to integrate theory and practice. (May be repeated once for credit with permission of instructor.)

Preparation for Course

P: consent of instructor.

Cr. 3.

PSY 490 - Practicum in Psychotherapy

Students are introduced to the theories and practice of psychotherapy through seminar discussion, role-played practice, supervision, and live observation of on-going psychotherapy cases in the departmental clinic.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Hours

Class 2, Clinic 2.

PSY 499 - Honors Thesis in Psychology

Individual, original research especially encouraged for students considering graduate school. May be based on either data collection or a theoretical synthesis of previous research. The topic is selected by the student with approval from a thesis advisor who, along with a thesis advisory committee, evaluates the finished paper according to departmental standards.

Preparation for Course

P: PSY 201 and PSY 203, a 3.0 (B) GPA, and consent of thesis advisor. For psychology majors only.

Cr. 3.

PSY 540 - History of Psychology

A review of the philosophical, theoretical, and methodological issues that entered into the development of modern psychology. Emphasis is placed on historical themes that continue to be active in the science and profession of psychology.

Preparation for Course

P: senior class standing and 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PSY 550 - Introduction to Clinical Psychology

The case-study method, including a discussion of the importance of historical information, the contribution of clinical tests to diagnosis, and a general survey of prevention and treatment techniques.

Preparation for Course

P: 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Additional credits in psychology at the 200 level or above Credits: 9

3 credits must be taken at IPFW

Successful completion of the Major Field Test in Psychology

General Elective Courses

Sufficient additional credits to bring the total to 124.

Total Credits: 124

Public Affairs (B.S.P.A.)**Program: Bachelor of Science in Public Affairs**

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/SPEA/

The student learning outcomes for the degree are as follows:

Students should be able to:

- Understand fiscal management of public agencies.
- Apply techniques of revenue administration, debt management, and public budgeting.
- Understand origins, processes, and impact of law in the creation and implementation of public policy.
- Understand the capabilities of management science.
- Appropriately use quantitative approaches for dealing with management and policy problems.

The B.S.P.A. degree program provides a background in the liberal arts and a focus on public affairs. This degree offers majors in criminal justice, environmental policy, health services administration, legal studies, and public management. In addition, a specialized study major may be developed with the approval of a faculty advisor and the program director to meet special career needs. Internships are available and strongly encouraged to provide qualified students with the opportunity to apply classroom theory and techniques to real-life experiences. The internship program is designed for maximum flexibility; internships can be full or part time, paid or unpaid, credit or noncredit.

The DPEA curriculum is divided into four categories — general education, public affairs core, a major area, and general electives. The B.S.P.A. requires a minimum of 120 credit hours with a 2.0 or higher cumulative grade-point average and a 2.3 or higher grade-point average in core and major courses. No more than 90 credits may be transferred from other accredited institutions (60 credits from a junior college). No more than 10 credits can be taken by correspondence through the IU School of Continuing Studies. A maximum of 10 credits may be applied from military experience, and a maximum of 12 credits may be awarded for police academy training completed within the past year. Courses taken to meet specific DPEA degree requirements cannot be used to satisfy any other DPEA degree requirement, but may be double-counted to satisfy the IPFW general-education distribution requirements.

To earn the Bachelor of Science in Public Affairs at IPFW, you must fulfill the requirements of IPFW (see Part 8) and the Division of Public and Environmental Affairs, and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

Area I - Reading/Writing Credits: 3

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area I - Listening/Speaking Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area I - Quantitative Reasoning Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting:

Some courses may be used to fulfill both Quantitative Reasoning and the DPEA Quantitative Methods requirements.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting:

Some courses may be used to fulfill both Natural and Physical Sciences Requirements and the DPEA Natural Sciences Requirements.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both The Individual, Culture, and Society requirements and DPEA Arts and Humanities requirements or DPEA Social and Behavioral Sciences requirements.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both Humanistic Thought and the DPEA Arts and Humanities requirements.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both the Creative and Artistic Expression requirement and a DPEA Arts and Humanities requirement or a Social and Behavioral Science requirement.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both the Inquiry and Analysis requirement and a DPEA Arts and Humanities requirement or a Social and Behavioral Sciences requirement.

Division of Public and Environmental Affairs

I. General Education Courses Credits: 53

A. Communication Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following courses:

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

B. Quantitative Methods Credits: 9

Three credits in computer literacy skills from the following:

BUS K200 - Computer Literacy Concepts for Business

Orientation to microcomputer hardware, software markets, and operating systems. Emphasis on end-user computer responsibilities for managers.

Cr. 0.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

One of the following mathematics courses:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following statistics courses:

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

C. Arts and Humanities Credits: 12

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

Arts & Humanities Electives

Choose two courses (six credits) from at least two of the following subject areas:

Classical Studies, Communication, English, Film, Fine Arts, Folklore, Foreign Language, History, Honors (Humanities only), Music, Philosophy, Theatre

D. Natural Sciences Credits: 8

Select Natural Science credits totaling 8:

A minimum of 6 credits must be from the following University approved General Education Area II courses.

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems. Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 120 - Chemistry and Art

This course is designed to introduce students majoring in fields outside the physical and life sciences to the basic principles of chemistry. These principles will be presented in the context of the materials used by visual artists to produce and preserve paintings, ceramics, metalworks and photographs.

Cr. 3.

Hours

Class 3, Lab. 3.

Session Indicators

Fall

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL S100 - General Geology (Honors)

Survey of physical geology and introduction to historical geology. Similar to G100 except students also participate in a 10-14 day field exploration of some region in North America. (Field trip in May after classes end.) Credit given for only one of the following: G100, S100, or G103.

Preparation for Course

P: consent of instructor, MA 153 placement, ENG W131 placement, and exemption from or completion of ENG R150.

Cr. 5.

Session Indicators

(Alternate springs)

IDIS G102 - Freshman Seminar/Physical and Natural World

Introduction to scientific study of the physical and natural world. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area II. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 115 - Introduction to Lasers

Two-hour lecture and two-hour laboratory class about the theory and operation of lasers. Lectures will discuss basic optics; the operation of lasers; laser safety; and the uses of lasers in science, industry, construction, communication, entertainment, and medical fields. Laboratory will reinforce classroom discussions. Class intended for nonphysics majors.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 120 - Physics of Sports

This course enables students to learn fundamental physical principles and concepts from examples of situations occurring in sports. The numerous recent applications of physics toward enhancing sports performance, both by improving techniques and equipment, will be selectively studied. Physical concepts such as velocity and acceleration, force, momentum, impulse, rotational motion, torque, pressure, fluid flow, energy, and power will be introduced and exemplified through sports. The course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 127 - Physics for Computer Graphics and Animation

A study of the physics of light and its interactions with objects as these topics apply to the production of computer-generated images. The course will investigate light and color through observation and the use of 3-D graphics programs. In particular how light interacts with surfaces and how we see will be explored in order to understand how to make graphic images that appear true to life.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 135 - The First Three Minutes

This course is a descriptive introduction to the major concepts of contemporary physics and their relationship to theories of the origin of the universe. The course presents a historical survey of cosmological thought, leading to today's recent developments. Topics include stars and galaxies, the four forces, relativity, quantum physics, elementary particles, and the Big Bang. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 136 - Chaos and Fractals

This course explores novel ideas in geometry and dynamical systems as they appear in natural phenomena. Irregular patterns in nature can be understood in terms of a fractal geometry. Physical processes that appear to be random actually obey a deterministic law. The concepts of chaos and fractals help us to understand these processes. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

E. Social and Behavioral Sciences Credits: 15

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and

unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

SPEA V371 - Financing Public Affairs

A survey of economic and political theories of market failures, public expenditure evaluation, economic stabilization, systems of redistribution and fiscal federalism. Examples and applications to contemporary government decisions.

Preparation for Course

P: V170, ECON E201, E202.

Cr. 3.

Social & Behavioral Science Electives

Choose two courses (six credits) from the following subject areas:

Anthropology, Criminal Justice (for non-Criminal Justice majors), Economics, Geography (selected), Journalism, Linguistics, Political Science, Psychology, Sociology, Women's Studies

II. Public Affairs Core Credits: 12

A grade of C or better is required in each of these courses.

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA H120 - Contemporary Health Issues

An examination of current public health, environmental health, and health service delivery issues in the United States. Topics include the organization and costs of health systems, access to care, and the interrelationships between risk factors and health; also environmental challenges facing our society and their impact on health.

Cr. 1-3.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

III. Major Credits: 27 to 30

A. Criminal Justice Credits: 30 - Charles "Bud" Meeks Criminal Justice Program

SPEA J201 - Theoretical Foundations of Criminal Justice Policies

This course examines the impact of sociological, biological, and economic theories of crime and the practice of criminal justice. Focus is upon the nature and importance of theory, context of theoretical developments, methods for the critical analysis of theoretical developments, and policy implications of the varying perspectives considered.

Preparation for Course

P: J101.

Cr. 3.

SPEA J202 - Criminal Justice Data, Methods, and Resources

Course examines basic concepts of criminal justice. Students become familiar with research techniques necessary for systematic analysis of the criminal justice system, offender behavior, crime trends, and program effectiveness. Students will learn to critically evaluate existing research. Students will become familiar with existing sources of criminal justice data and will learn to assess the quality of that data.

Preparation for Course

P: J101.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J306 - The Criminal Courts

An analysis of the criminal justice process from prosecution through appeal. The organization and operation of felony and misdemeanor courts are examined. Topics include prosecutorial decision-making; plea-bargaining; judicial selection; and the conduct of trials, sentencing, and appeal.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J321 - American Policing

This course will examine the history, evolution, and organization of policing in the United States. Emphasis is placed on such major contemporary issues as the police role, discretion, use of force, corruption, accountability, and community policing.

Preparation for Course

P: J101; R: J201, J202.

Cr. 3.

SPEA J331 - Corrections

This course examines the historical development of the American correctional system; the study of administration of local, state, and federal corrections programs, including jail, probation, community corrections, and prisons. Includes the study of punishment rationales, current correctional policies, and possibilities for reform.

Preparation for Course

P: J101; R: J201, J202.

Cr. 3.

SPEA J439 - Crime and Public Policy

A detailed examination of the major efforts designed to control or reduce crime. A review of existing knowledge is followed by an investigation of current crime control theories, proposals, and programs.

Preparation for Course

P: J101; senior standing or consent of instructor.

Cr. 3.

Additional SPEA Electives Approved By Advisor Credits: 9

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

B. Environmental Policy Credits: 27

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

SPEA H316 - Environmental Health Science

A study of human interaction with the environment and potential impacts of environmental agents on health and safety. Hazards from natural sources and human activities that contaminate our air, land, water, food, homes, neighborhoods, and workplaces are examined. Environmental control activities, including pollution control technology and policy, are also examined.

Cr. 3.

SPEA H416 - Environmental Health Policy

Study of professional requirements and duties of the environmental health functions within health agencies; consideration of applicable laws and standards in each environmental health function; environmental evaluation, implementation, and personnel responsibilities.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

Either of the following environmental science courses:

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

12 credits chosen from the following:

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E401 - Ecology and Culture

How human beings, nature, and culture interrelate. Examination of the varied approaches used in hunting, agricultural, and industrial societies for adapting to the physical environment.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

PHIL 328 - Ethics and Animals

A study of traditional philosophical positions on questions of animal rights. Topics covered typically include human rights and doctrines of duty and obligation, vivisection, animals and food, extinction, the pet industry, hunting, the fur industry, and animal-rights organizations.

Cr. 3.

POLS Y367 - International Law

Sources and consequences of international law; relationship to international organizations and world order; issues of national sovereignty, human rights, conflict resolution, international property rights, world trade, environmental change, and other topics.

Preparation for Course

P: Y109 or consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S360 - Topics in Social Policy

Specific topics to be announced, e.g., environmental affairs, urban problems, poverty, population problems. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

SOC S318 - Social Change

Introduction to theoretical and empirical studies of social change. Explores issues such as modernization; rationalization; demography, economic, and religious causes of change; reform and revolution.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S333 - Collective Behavior and Social Movements

Considers various types of non-institutionalized collective behaviors (such as rumors, urban legends, panics, riots) in past and modern American history as well as theories and cases of the "why" and "how" of social movements, counter-movements, and revolutions.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA V365 - Urban Development and Planning

This course identifies the major problems associated with urban development in the United States and investigates the potential of public planning strategies and tools to deal with these problems. An emphasis is placed on the application of analytical approaches to problem definition and solution.

Preparation for Course

P: V264, K300.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff

work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

SPEA V390 - Readings in Public Affairs

Independent readings and research related to a topic of special interest to the student. Written report required. May be repeated for credit.

Preparation for Course

P: permission of instructor.

Cr. 1-3.

SPEA V450 - Contemporary Issues in Public Affairs

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

(topic must be approved by faculty advisor)

SPEA V465 - Geographic Information Systems for Public and Environmental Affairs

Students will learn the concepts, methodologies, and perspectives essential for using geographic information systems (GIS) to address critical public affairs issues. Through course projects, students will learn how to use desktop and Internet-based GIS applications and will develop complementary skills related to designing and implementing GIS applications for public-sector organizations.

Preparation for Course

P: CS 106.

Cr. 3.

SPEA V490 - Directed Research in Public and Environmental Affairs

To be arranged with the individual instructor and approved by the chairperson of the undergraduate program.

Cr. 1-3.

Notes

May be repeated for credit.

C. Health Services Administration Credits: 27

SPEA H320 - Health Systems Administration

An overview of the U.S. healthcare delivery system. Examines the organization, function, and role of the system; current system problems; and alternative systems or solutions.

Cr. 3.

SPEA H322 - Principles of Epidemiology

A basic overview of epidemiologic methodology and techniques. Both communicable and chronic disease risk factors will be discussed, along with data acquisition, analysis techniques, and current published epidemiological studies.

Cr. 3.

SPEA H352 - Health Finance and Budgeting

A study of the financial management of healthcare facilities based on generally accepted business principles. Accounting and managerial control of cash, accounts receivable, inventory control, budgeting and cost control, as well as accounting and evaluation of short- and long-term debt will be examined.

Cr. 3.

SPEA H402 - Hospital Administration

The study of organization, structure, function, and fiscal operations within hospitals. The role of the hospital in the community, relationship to official and voluntary health agencies, coordination of hospital departments and managerial involvement will be examined.

Preparation for Course

P: H320.

Cr. 3.

SPEA H411 - Chronic and Long-Term Care Administration

Administering programs across the continuum of care including nursing homes, hospice, home health, and assisted living; Medicare and Medicaid financing; quality improvement; care management; and needs of special populations, particularly, vulnerable elders.

Cr. 3.

One of the following:

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

Additional 9 credits of DPEA electives approved by advisor

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

D. Legal Studies Credits: 30

POLS Y211 - Introduction to Law

An introduction to law as a method for dealing with social problems and as an aspect of the social and political system. An introduction to legal reasoning, procedures, and materials. Will usually include comparison of United States and other societies and their approaches to law.

Cr. 3.

POLS Y304 - Constitutional Law

American political powers and structures; selected Supreme Court decisions interpreting American constitutional system.

Preparation for Course

P: Y103 or equivalent and consent of instructor.

Cr. 3.

POLS Y305 - Constitutional Rights and Liberties

Extent and limits of constitutional rights; selected Supreme Court decisions interpreting American constitutional system.

Preparation for Course

P: POLS Y103 or equivalent and consent of instructor.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

SPEA V377 - Legal Process and Contemporary Issues in America

An introduction to the American legal system, including the Constitution, courts system, and administrative law in federal and state agencies. Readings and discussion center around current issues affected by the legal process.

Preparation for Course

P: V376.

Cr. 3.

SPEA V405 - Public Law and the Legislative Process

This course focuses on Congress as a policy-making body in the U.S. public law system. It covers the constitutional framework for congressional operations as well as technical aspects of the legislative process such as bill drafting and analysis, the role of leadership, and the prerogatives of individual members.

Cr. 3.

Elective Courses Credits: 12

Choose 4 courses from the following. A minimum of 6 credits must be SPEA courses.

BUS L303 - Commercial Law II

Emphases on Uniform Commercial Code (sales, negotiable instruments, and secured transactions), business organizations and relationships, bankruptcy, and the law of ownership, custody, and possession. Required for business B.S. majors in the accounting concentration.

Preparation for Course

P: BUS L200; admission to business B.S. or P.B.A. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Sawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST H260 - History of Women in the United States

How have women's lives changed from the colonial period to the 20th century? This introductory survey focuses on women's historical roles in the workplace, the family, and politics. Material will be drawn from legal, constitutional, political, social, demographic, economic, and religious history. Credit not given for both H216 and H260.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

JOUR J300 - Communications Law

History and philosophy of laws pertaining to free press and free speech. Censorship, libel, contempt, obscenity, right of privacy, copyright, government regulations, and business law affecting media operations. Stresses responsibilities and freedoms in a democratic communications system. Required course for journalism majors and IPFW journalism minor. Also required course for radio and television students.

Cr. 3.

PHIL 260 - Philosophy and Law

A discussion of philosophical issues in the law. Topics will include a critical examination of such basic concepts in law as property, civil liberty, punishment, right, contract, crime, and responsibility; and a survey of some main philosophical theories about the nature and justification of legal systems. Readings will be drawn from both law and philosophy.

Cr. 3.

POLS Y328 - Women and the Law

Exploration of origins and underlying rationale of women's status in the American legal tradition and the role that law plays in helping to shape political climate and structure of the nation. Course will provide basic knowledge of various fields of law as they pertain to women.

Cr. 3.

SOC S317 - Social Stratification

Nature, functioning, and maintenance of systems of social stratification in local communities and societies. Correlates and consequences of social class position and vertical mobility.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA H441 - Legal Aspects of Healthcare Administration

An overview of the liability and legal responsibility, as well as legal recourse healthcare facilities may exercise. This course will discuss policies and standards relating to health facility administration. Also included is a discussion of financial aspects unique to the hospital/healthcare facility environment, such as third-party payments and federal assistance.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J302 - Procedural Criminal Law

Criminal law application and procedure from the initiation of police activity through the correctional process utilizing the case-study method.

Preparation for Course

P: J101.

Cr. 3.

SPEA V406 - Public Law and the Electoral Process

The purpose of this course is to facilitate understanding of the interaction of electoral politics and policy. It covers the legal framework of the evolution of the "right" to vote, the impact of the judiciary on the structure of elections, limitations on campaign practices, and the importance of legislative districting and its control.

Cr. 3.

SPEA V456 - Topics in Public Law

Extensive analysis of selected contemporary issues in public law. Topics vary from semester to semester. May be repeated for credit.

Cr. 3.

E. Public Management Credits: 27

SPEA V263 - Public Management

This course is an examination of the management process in public organizations in the United States. Special attention will be given to external influences on public managers, the effects of the intergovernmental environment, and in particular, problems of management in a democratic, limited government system.

Cr. 3.

SPEA V264 - Urban Structure and Policy

An introduction to urban government and public policy issues. Topics include urban government structure and policy making, the economic foundations and development of cities, demography of cities and suburbs, land-use planning, and other selected urban policy problems.

Cr. 3.

SPEA V348 - Management Science

Introduction to management-science models and methods for policy analysis and public management. Methods include decision analysis, linear programming queuing analysis, and simulation. Computer-based applications are included. Prior familiarization with computers is recommended, though not required.

Preparation for Course

P: K300, MA 153 or MA 213.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

Three Additional SPEA Electives Approved By Advisor Credits: 9

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

F. Specialized Study Major Credits: 27

This major is intended for students, often working professionals, with special needs regarding a course of study in Public Affairs. The courses for the major must be approved by a faculty advisor in the Division of Public and Environmental Affairs. The minimum guidelines are nine courses at the 300-400 level, four of which must be SPEA courses.

IV. General Electives Credits: 25–28

Additional courses of interest should be selected to raise the total credits to the required 120 for the BSPA degree. Students majoring in Criminal Justice or Legal Studies need an additional 25 credits minimum. Students majoring in

Environmental Policy, Health Services Administration, Public Management, or Specialized Study need an additional 28 credits minimum.

Total Credits: 120

Secondary Education-Adolescence/Young Adulthood Concentration (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in secondary education is intended to prepare students for successful careers as teachers of children in middle school/junior high and high school settings. The secondary education degree is divided into two concentrations: early adolescence, for middle school/junior high settings, and adolescence/young adulthood, for high school settings. Pre-service teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, and the other requirements listed under Teacher Licensure in the Special Academic Regulations, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in secondary education with a concentration in adolescence/young adulthood, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

School Setting: High School (grades 9-12)

General Education Credits: 45

School of Education Credits: 34

Content Area Majors, variable credits depending on the program

Elective credits variable, but must be at least 124.

IPFW General Education Requirements Credits: 45

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Any college-level math including: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 9

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3

Two of the following: Credits: 6

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

astronomy, chemistry, geology, or physics

Area III—The Individual, Culture, and Society Credits: 9

See Part 2 General Education Requirements for approved courses

One of the following: Credits: 3

- American history or world history or humanities (FWAS H201 or H202)

One of the following: Credits: 3

- political science or sociology

One of the following: Credits: 3

- anthropology, business, economics, folklore, journalism, linguistics, psychology, or public and environmental affairs

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- English Literature Credits: 3

One of the following: Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

or fine arts or music

One of the following: Credits: 3

- film or philosophy or theatre

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI- Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (P: Block 1)

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

One methods course from your content major: Credits: 3

EDUC M443 - Methods of Teaching High School Social Studies

Public school participation required.

Cr. 3.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M447 - Methods of Teaching High School English

Public school participation required.

Cr. 3.

EDUC M448 - Methods of Teaching High School Mathematics

Cr. 2-4.

Credits: 3

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

and

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

Block 3: Teaching Major

In addition to the above courses, you must complete one content area major. See list of majors and courses below.

Student Teaching

- EDUC M501 *Portfolio* Cr. 0

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Optional:

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(for Middle School Endorsement area)

Credits: 4

Electives (Variable)

Total Credits: 124

Core Content Area Majors

Below is a list of teaching content area majors.

Earth and Space Science Teaching Major (39–40 credits)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of the following: Credits 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

w/GEOL L100

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

w/GEOL L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Two of the following: Credits: 6

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

French Teaching Major (46 credits)

- FREN F3xx-4xx - Literature Electives (300–400 level) Credits: 6
- FREN F3xx-4xx - Electives (300–400 level) Credits: 9

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

Credits: 3

One of the following: Credits: 3

FREN F463 - Civilisation Francaise I

French civilization from medieval period through 17th century.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

German Teaching Major (44 credits)

- GER 3XX - Literature Elective (300 level) Credits: 3
- GER G3xx - Elective (300 level) Credits: 3
- GER G4xx - Electives (400 level) Credits: 12

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

One of the following: Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

GER G463 - German Culture

Taught in German.

Preparation for Course

P: 6 credits of 300-level work or departmental permission.

Cr. 3.

GER G464 - Kultur Und Gesellschaft

The interaction of social, intellectual, and artistic forces in German life in the last one to two centuries, stressing interdisciplinary aspects.

Preparation for Course

P: GER G463.

Cr. 3.

Language Arts (English) Teaching Major (39 credits)

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W400 - Issues in Teaching Writing

Focuses on the content of rhetoric and composition and considers fundamental theoretical and practical issues in the teaching of writing. Reviews rhetorical and compositional principles that influence writing instruction, textbook selection, and curriculum development.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

One of the following in writing: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level

courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Two of the following in language study Credits: 6

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G301 - History of the English Language

Historical and structural analysis of English language in stages of its development. Political and social events affecting development of language; interrelationship of language and literature, evolution of modern English phonology, syntax, orthography, and lexicon.

Preparation for Course

P: ENG G205 or LING L103.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

One of the following in pre-1700 British literature: Credits: 3

ENG L220 - Introduction to Shakespeare

Shakespeare's best-known plays and poems. Credit not given for both L220 and L315.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

If you are required by placement examination to take ENG P131, or R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L301 - Critical and Historical Survey of English Literature I

Representative selections with emphasis on major writers from the beginnings to Swift and Pope.

Preparation for Course

P: ENG L202, or W233 or equivalent.

Cr. 3.

ENG L304 - Old English Language and Literature

Language and literature of England before the Norman Conquest, with intensive study of original texts.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L305 - Chaucer

Examination of *The Book of the Duchess*, *The Parliament of Fowls*, *Troilus and Criseyde*, and selected *Canterbury Tales* to acquaint students with the language, conventions, and background of Chaucer's poetry.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L306 - Middle English Literature

A survey of Middle English lyrics, drama, and romance, with special attention to Langland, *The Pearl*-poet, and Gower, designed to acquaint the student with the language and literary development of England from 1066 to 1500.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L308 - Elizabethan Drama and Its Background

English drama from Middle Ages to 1642, including principal Elizabethan and Caroline dramatists and their best plays.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L309 - Elizabethan Poetry

Major Elizabethan poets, with special attention to Spenser.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L315 - Major Plays of Shakespeare

A close reading of a representative selection of Shakespeare's major plays. Credit not given for both L220 and L315.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L317 - English Poetry of the Early 17th Century

Chief poets and their intellectual milieu (1600-1660).

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L318 - Milton

Poetry and prose of John Milton, with special attention to *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following in post-1700 British literature: Credits: 3

ENG L302 - Critical and Historical Survey of English Literature II

Representative selections with emphasis on major writers from the rise of romanticism to the present.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L322 - English Literature, 1660-1789

Survey of nondramatic literature of the Restoration and 18th century. Emphasis on Dryden, Pope, Swift, and Johnson and his circle.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L332 - Romantic Literature

Surveys the principal writers of the Romantic Movement (Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats).

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L335 - Victorian Literature

A survey of English poetry and prose from about 1832 to 1900. Attention to figures like Tennyson, Browning, and Carlyle.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L345 - 20th Century British Poetry

Modern poets, particularly Yeats, Eliot, Auden; some later poets may be included.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L346 - 20th Century British Fiction

20th century novel and its techniques and experiments, chiefly Lawrence, Joyce, Woolf, and recent novelists.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L347 - British Fiction to 1800

Forms, techniques, and theories of fiction as exemplified by such writers as Defoe, Richardson, Fielding, Smollett, and Sterne.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L348 - 19th Century British Fiction

Forms, techniques, and theories of fiction as exemplified by such writers as Scott, Dickens, Eliot, and Hardy.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in American literature: Credits: 3

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L354 - American Literature Since 1914

Provides an understanding of the pivotal literary innovations and cultural changes during this period. Literary movements such as naturalism, realism, and modernism may be the subject of focus, as might changes in race and gender relations, labor politics, immigration policies, regionalism, and the increasing shift from agricultural to urban economics.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L357 - 20th Century American Poetry

American poetry since 1900, including such poets as Pound, Eliot, Frost, Stevens, Williams, and Lowell.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L358 - 20th Century American Fiction

American fiction since 1900, including such writers as Dreiser, Lewis, Fitzgerald, Hemingway, Faulkner, and Bellow.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

ENG L372 - Contemporary American Fiction

American fiction of the last 20 years, including such writers as Bellow, Barth, Didion, Malamud, Pynchon, and Updike.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L381 - Recent Writing

Selected writers of contemporary significance. May include groups and movements (such as black writers, poets of projective verse, new regionalists, parajournalists and other experiments in pop literature, folk writers, and distinctly ethnic writers); several recent novelists, poets or critics; or any combination of groups.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in ethnic, minority, or non-Western: Credits: 3

ENG L107 - Masterpieces of Asia

An introduction to the literature of Asia focusing on literary masterpieces of India, China, Japan, and other countries.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L108 - Introduction to Contemporary Literature

Significant fiction and drama of the past 20 years. The course may emphasize traditional writers such as Updike and Solzhenitsyn, or experimentalists such as Robbe-Grillet and Brecht.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

ENG L379 - American Ethnic and Minority Literature

A survey of representative authors and works of American ethnic and minority literature with primary focus on black, Hispanic, and Native Americans.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L381 - Recent Writing

Selected writers of contemporary significance. May include groups and movements (such as black writers, poets of projective verse, new regionalists, parajournalists and other experiments in pop literature, folk writers, and distinctly ethnic writers); several recent novelists, poets or critics; or any combination of groups.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in Western literature, other than British or American:

Credits: 3

CLAS C205 - Classical Mythology

An introduction to Greek and Roman myths, legends, and tales, especially those that have an important place in the Western cultural tradition.

Preparation for Course

P: ENG 131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

CLAS C405 - Comparative Mythology

The advanced study of Classical Greek and Roman myths, including the reading and evaluation of comparative myths, both inside and outside the Mediterranean cultural area.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3-4.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L362 - Modern Drama

Special attention to Ibsen, Strindberg, Chekhov, Brecht, Shaw, and O'Neill.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following in mass communications, film, or journalism: Credits:
3

COM 210 - Debating Public Issues

Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods and bibliography, identification and analysis of issues, construction and organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.

Preparation for Course

P: 114.

Cr. 3.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

One elective in English, linguistics, or mass communications (other than COM 114) Credits: 3

Social Studies Teaching Major (51–60 credits)

Must complete all course work in 3 content areas plus one course from each of the other two content areas (diversified credit) to complete the major.

Economics (15 credits)

- Economics elective Credits: 3
- Economics elective (300–400 level) Credits: 3

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Government and Citizenship (15 credits)

- Political science electives (300–400 level) Credits: 6

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

Two of the following: Credits: 6

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Historical Perspectives (24 credits)

American Civilization

- HIST elective (American) Credits: 3
- HIST elective (American) (300–400 level) Credits: 3

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

World Civilization

- HIST elective (non-American) Credits: 3
- HIST elective (non-American) (300-400 level) Credits: 3

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Psychology (15 credits)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

One PSY Elective Credits: 3

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Sociology (15 credits)**SOC S161 - Principles of Sociology**

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

SOC S318 - Social Change

Introduction to theoretical and empirical studies of social change. Explores issues such as modernization; rationalization; demography, economic, and religious causes of change; reform and revolution.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S330 - Sociological Social Psychology

Examines the reciprocal link between the individual and the larger society. Topics covered include self-concept and its development, deviant types, status, power, exchange, justice issues, human motivation, attribution, equity.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Each of the following Credits: 9

- SOC elective Credits: 3
- SOC electives (300–400 level) Credits: 6

Diversified Credits: 6

Spanish Teaching Major (53 credits)

- SPAN S4XX Elective (400 level) Credits: 3

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and

Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Notes

Students completing the adolescence/young adulthood concentration may also add additional middle school/junior high teaching areas by completing any of the middle school/junior high endorsements and completing a middle school practicum.

Other IPFW departments offer degrees that lead to teacher certification. They include art education, biology, chemistry, mathematics, music education, and physics. Please refer to these departments in their appropriate Part 4 sections of this Bulletin for more information and course requirements.

Secondary Education-Early Adolescence Concentration (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society

- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in secondary education is intended to prepare students for successful careers as teachers of children in middle school/junior high and high school settings. The secondary education degree is divided into two concentrations: early adolescence, for middle school/junior high settings, and adolescence/young adulthood, for high school settings. Pre-service teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, and the other requirements listed under Teacher Licensure in the Special Academic Regulations, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in secondary education with an early adolescence concentration, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

School Setting: Middle School/Junior High (grades 6-8)

General Education Credits: 45

School of Education Credits: 34

Content Area Minors (must select 2) Credits: 48

Some content area minor credits will overlap with general education credits.

- Language Arts Credits: 24
- Mathematics Credits: 24
- Science Credits: 24
- Social Studies Credits: 24

Elective credits variable, but must be at least 124.

IPFW General Education Requirements Credits: 45

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(a grade of B or better is required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Any college-level math including: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 9

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Two of the following: Credits: 6

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

astronomy, chemistry, geology, or physics

Area III—The Individual, Culture, and Society Credits: 9

See Part 2 General Education Requirements for approved courses

One of the following: Credits: 3

- American history or world history or humanities (FWAS H201 or H202)

One of the following: Credits: 3

- political science or sociology

One of the following: Credits: 3

- anthropology, business, economics, folklore, journalism, linguistics, psychology, or public and environmental affairs

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- English literature Credits: 3

One of the following: Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

or fine arts or music

One of the following: Credits: 3

- film or philosophy or theatre

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

- PPST (Pre-Professional Skills Test)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC S405 - The Middle and Junior High School

The course provides future middle school and junior high teachers with an understanding of how early adolescent students and school structures impact curriculum, instruction, and classroom management decisions. The course meets the middle/junior high school endorsement requirement for elementary school majors.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Block 3: Core Content Area Minors

In addition to the above courses, you must complete 24 credit hours in two of four core content area minors (See course requirements for core content area minors listed below)

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Optional:

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(for an additional concentration area)

Credits: 4

Electives (Variable)

Total Credits: 124

Core Content Area Minors (24 credits)

In addition to the above courses, you must complete 24 credit hours in two of four core content area minors.

Language Arts (24 credits)

- British literature elective (300 level or higher) Credits: 3
- American literature elective (300 level or higher) Credits: 3

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Mathematics (24 credits)

- Computer science elective Credits: 3
- Mathematics, computer science, or statistics electives Credits: 2–3

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school

geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(or waiver)

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

(or higher)

One of the following: Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Science (24 credits)

- Science electives Credits: 0-2

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

and

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of the following: Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Social Studies (24 credits)

- American History Credits: 3
- Sociology Credits: 3
- Political Science Credits: 3
- Social Studies electives Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Sociology (B.A.)

Program: B.A.

Department of Sociology

College of Arts and Sciences

Classroom-Medical Building 241 ~ 260-481-6842 ~ www.ipfw.edu/sociology

The student learning outcomes for the degree are as follows:

- **Theoretical:** Graduates will be able to analyze and evaluate major theoretical perspectives in sociology.
 - Graduates should be able to identify the general theoretical orientation.
 - Graduates should be able to apply theoretical analyses of social structure and social processes.
 - Graduates should be able to interpret social issues in terms of the major theoretical perspectives.
- **Methodological:** Graduates will be able to utilize and evaluate research methods and data analysis used in sociology.
 - Graduates should be able to demonstrate appropriate use of both quantitative and qualitative methodologies.
 - Graduates should be able to evaluate different research methods.
- Graduates should be able to interpret the results of data gathering.
- Graduates should be able to demonstrate appropriate use of statistical techniques.
- Graduates should be able to demonstrate competent use of statistical software.
- **Critical Thinking:** Graduates will be able to evaluate critically arguments and situations.
 - Graduates should be able to critically evaluate theoretical arguments.
 - Graduates should be able to develop evidence-based arguments.
 - Graduates should be able to critically evaluate published research.
- **Communication Skills:** Graduates will be able to communicate effectively in both written and oral form.

- Graduates should be able to write a research report.
- Graduates should be able to develop an oral research report.
- **Professional Ethics:** Graduates will be knowledgeable of appropriate ethics concerning both professional conduct and the use of human subjects.
 - Graduates should demonstrate a mastery of the ethical standards for conducting research with human subjects.
 - Graduates should demonstrate an understanding of the ethical standards of the American Sociological Association.

Courses in sociology provide an understanding of society and of the relationship between the individual and society. Studies in sociology help to prepare you for graduate school and careers in the social services, law, human relations, criminal justice, government, education, and mass media.

Although a minor is not required, study in an outside area is recommended. Anthropology, computer science, economics, history, labor studies, political science, psychology, organizational leadership and supervision, and women's studies support the major well.

To earn a B.A. with a major in sociology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the following courses.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SOC) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

SOC S260 - Intermediate Sociological Writing

Introduction to the analysis of social issues. Emphasis on the development of writing skills appropriate to the discipline. Approved by Arts and Sciences for use in fulfilling the writing requirement.

Preparation for Course

P: SOC S161 and ENG W131 (or equivalent); restricted to sociology majors.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.
(credits included in Major Courses, below)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in SOC)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S260 - Intermediate Sociological Writing

Introduction to the analysis of social issues. Emphasis on the development of writing skills appropriate to the discipline. Approved by Arts and Sciences for use in fulfilling the writing requirement.

Preparation for Course

P: SOC S161 and ENG W131 (or equivalent); restricted to sociology majors.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.

SOC S340 - Social Theory

Sociological theory, with focus on content, form, and historical development. Relationships among theories, data, and sociological explanation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S352 - Methods of Social Research

Introduction to methods of sociological research. Topics covered include qualitative and quantitative research methods, research design and implementation, experiments, survey research techniques, field research techniques, data collection, data analysis, and the ethical concerns of social research.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

or

SOC S470 - Senior Seminar

Capstone seminar in sociology; integrates knowledge on theory and practice from previous sociology courses, with emphasis on historical, contemporary, and future issues in sociology.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor. Class restricted to sociology majors with senior class standing.

Cr. 3.

Variable Title

(V.T.)

Sociology Elective Courses Credits: 15

All additional sociology elective courses must be at the 200 level or above; 9 of the 15 credit hours must be at the 300 level or above.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Spanish (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

To earn the B.A. with a major in Spanish, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SPAN) Credits: 3

Recommended:

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

College of Arts and Sciences Requirements

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)

Foreign Language (10–14 credits)

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

or

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Additional Foreign Language Requirements

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Distribution (not in SPAN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in Western tradition Credits: 3
- Non-Western culture requirement may be satisfied with one of the following courses Credits: 0

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S479 - Mexican Literature

Mexican literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S480 - Argentine Literature

Argentine literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Core and Concentration (Major) Courses

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

One of the following courses in Spanish linguistics: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating topics course and may only count in the area of the specific topic.

One of the following courses in Spanish literature: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301–S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating course and may only count in the area of the specific topic.

One of the following courses in Spanish-American literature: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating course and may only count in the area of the specific topic.

Additional credits in 400-level Spanish civilization, language, or literature courses Credits: 6

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Spanish with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a B.A. with a major in Spanish with teacher certification must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the School of Education (see Part 4) and satisfactorily complete the following requirements.

Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The Praxis II, Spanish: Content Knowledge test must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SPAN) Credits: 3

Recommended:

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

College of Arts and Sciences Requirements

English Writing Credits: 0

(requirement is satisfied by ILCS I300, listed below)

Foreign Language (10–14 credits)

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

or

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Additional Foreign Language Requirements**SPAN S203 - Second-Year Spanish I**

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Distribution (not in SPAN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in Western tradition Credits: 3
- Non-Western culture requirement may be satisfied with the following courses Credits: 0

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S479 - Mexican Literature

Mexican literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S480 - Argentine Literature

Argentine literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Core and Concentration (Major) Courses

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following courses in Spanish linguistics: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following courses in Spanish literature: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following courses in Spanish-American literature: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301-S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301-S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

One of the following culture/civilization courses: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Additional credits in 400-level Spanish civilization, language, or literature courses Credits: 3

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Speech and Hearing Therapy (B.S.)

Program: B.S.

Audiology and Speech Sciences

College of Arts and Sciences

Neff Hall 279 ~ 260-481-6410 ~ www.ipfw.edu/aus

The student learning outcomes for the degree are as follows:

- Students will acquire basic knowledge of the normal nature and development of speech.
- Students will acquire basic knowledge of language and hearing.
- Students will acquire basic knowledge of assessment, treatment and prevention of speech, language and hearing disorders.
- Students will demonstrate basic clinical skills of assessment.
- Students will demonstrate basic skill in the design and implementation of appropriate treatment plans.
- Students will acquire oral and written communication abilities and interpersonal skills needed for the assessment and treatment of speech, language and hearing disorders.

This preprofessional degree helps you prepare to pursue the master's degree in speech-language pathology or audiology and the following professional credentials: the Indiana Schools Standard Services-Specialist License, the license from the Indiana Speech-Language Pathology and Audiology Board, and the Certificate of Clinical Competence from the American Speech-Language-Hearing Association. With full academic preparation, including a master's degree in speech-language pathology or audiology, you may begin human-service careers working with children, adults, and/or older persons who have speech, language, or hearing disorders. You will offer professional assistance to enhance our most distinctive human ability — communication.

The curriculum offers courses and practical experiences that prepare you to work with communicatively disabled individuals in such settings as schools, hospitals, agencies, rehabilitation centers, clinics, and private practices. Beginning practicum courses prepare the student to work with clients. These practicum courses offer services through the speech-language clinic to the campus and surrounding community.

To earn the B.S. with a major in speech and hearing therapy, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
required

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

required; select one course from

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism,

free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

recommended

Area V—Creative and Artistic Expression Credits: 3

Select one:

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education

course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

recommended

Area VI—Inquiry and Analysis (not in AUS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing Credits: 3

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language Credits: 8

- *Foreign Language (111 and 112)*

Core and Concentration (Major) Courses

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

AUS 302 - Acoustic Bases of Speech and Hearing

The physical characteristics of speech sounds and the psychophysical processes involved in hearing.

Cr. 3.

Hours

Class 2, Lab. 2.

AUS 304 - Anatomy and Physiology of the Speech and Hearing Mechanism

An introduction to the anatomical and physiological bases of normal and abnormal voice, articulation, and hearing. Lab includes demonstrations and exercises to support lecture materials.

Preparation for Course

P: BIOL 203 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2.

AUS 306 - Introduction to Phonetics

An introduction to articulatory phonetics, speech sounds in languages of the world, and principles and symbols of the International Phonetic Alphabet. Extensive practice in phonetic transcription.

Cr. 3.

Hours

Class 3.

AUS 309 - Language Development

Specific nature, sequence, and pattern of oral language development from birth through adolescence. Nature of language acquisition and approaches to the study of children's language are presented. Linguistic and psychological explanations of the sequence of development are discussed.

Cr. 3.

AUS 420 - Introduction to Developmental Speech and Language Disorders

Introduction to disorders of speech and language in children. Characteristics of these disorders, methods of evaluation, and intervention procedures are discussed.

Preparation for Course

P: AUS 115, 306, 309.

Cr. 3.

AUS 460 - Introduction to Assessment Audiology

Authorized equivalent courses or consent of instructor may be used in satisfying course prerequisites. History of audiology, normal and abnormal processes of hearing, basic methods of audiological assessment, and introduction to the development and management of hearing-conservation programs. Laboratory provides practical instruction in the procedures discussed in class.

Preparation for Course

P: AUS 302 and 304 or equivalent.

Cr. 4.

Hours

Class 3, Lab, 2.

AUS 516 - Foundations of Assessment in Communication Disorders

An introduction to general principles of evaluation and assessment of communication disorders and to specific assessment tests.

Preparation for Course

P: AUS 115, 302, 304, 306, and 309.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

AUS 521 - Phonetic and Phonological Disorders in Children

A detailed study of phonetic and phonological aspects of speech sound disorders in children. Recent research findings dealing with normal and disordered development are reviewed. Advanced procedures for diagnosis and intervention are discussed.

Preparation for Course

P: AUS 306 and 309.

Cr. 2.

Dual Level Course

Undergraduate-Graduate

Credits from the following courses:

Students intending to pursue graduate studies are urged to select AUS 449 and should also consider completion of AUS 549. If 549 is not selected, then 590 should be the selection.

AUS 181 - First Course in American Sign Language

Basic manual communication skill including the American manual alphabet, approximately 550 basic signs, and the history and place of manual communication in society. Designed to give the students minimum vocabulary and skills in communicating with individuals who are dependent on this form of communication.

Cr. 3.

AUS 182 - Second Course in American Sign Language

Development of conversational skills, vocabulary, and basic grammar of sign language.

Preparation for Course

P: AUS 181 or equivalent.

Cr. 3.

AUS 399 - Directed Study in Audiology and Speech Sciences

Special projects such as directed readings, independent and/or cooperative research on professionally relevant topics under the guidance of an AUS faculty member.

Cr. 1-3.

AUS 405 - Augmentative and Computer Applications in Speech and Language

An introductory overview with emphasis on potential application in assessment, treatment, research, and administrative functions related to communication disorders.

Preparation for Course

P: one disorders course (AUS 420, 430, 521).

Cr. 3

AUS 430 - Speech-Language Disorders in Healthcare Settings

Presents speech-language disorders across the lifespan encountered in a variety of healthcare settings. Discusses the etiology, evaluation, and management of these disorders. Addresses administrative structures, team approaches, and reimbursement issues in healthcare settings.

Preparation for Course

P: 5 semester credits in speech pathology or consent of instructor.

Cr. 3

AUS 449 - Introduction to Clinical Practice in Speech-Language Pathology

The first in a series of practicum courses designed to provide instruction and practical experience in basic diagnostic procedures and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 115, 304, 306, 309; minimum grade of B in AUS 420, 521; overall GPA and in major of 3.0, and consent of instructor.

Cr. 2-3.

Hours

Class 2-4.

AUS 549 - Clinical Practice in Speech/Language Pathology I

The second in a series of practicum courses designed to provide instruction and practical experience in fundamental diagnostic and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 420, 449, 521 or equivalents, with a grade of B or better in each course. R: AUS 430 or equivalent and consent of instructor.

Cr. 1-8.

Hours

Class 1, Lab. 1-8.

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

AUS 550 - Aural Rehabilitation for Adults

Theoretical and clinical implications associated with the rehabilitation of hearing loss in adults and geriatric adults. Discussion centers on a family-centered team approach, built upon the effective use of amplification and other assistive devices.

Preparation for Course

P: AUS 460 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2.

Dual Level Course

Graduate-Undergraduate

AUS 551 - Aural Rehabilitation for Children

An overview of the effects of hearing impairment on language, speech, academic, and psychosocial development. Topics also include communication modalities, and principles and current practices for assessment and intervention.

Preparation for Course

P: AUS 460 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 3.

Dual Level Course

Undergraduate-Graduate

AUS 590 - Directed Study of Special Problems**Preparation for Course**

P: consent of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

General Elective Courses

You may wish to consider elective courses that fulfill requirements for a minor that supports preparation of AUS majors. Sufficient additional credits to bring the total to 124. Recommended:

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 124

Theatre (B.A.)

Program: B.A.

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

The student learning outcomes for the degree are as follows:

- Demonstrate an understanding of the creative process using the vocabulary of the appropriate discipline.
- Perform or create a work of personal expression and bring the work to fruition using applicable skills.
- Articulate a reflective and critical evaluation of their own and other's efforts using written and/or oral communication.

To earn the B.A. with a major in theatre, you must satisfy the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4), complete the following courses, earn a grade of C or better in each theatre course, and fulfill additional requirements specified in the theatre student handbook:

IPFW General Education Requirements (36 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

- Reading/Writing Credits: 3
- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- May not use THTR-prefixed course to fulfill requirement

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- May not use THTR-prefixed course to fulfill requirement.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Writing Requirements

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Theatre Core Courses (42 credits)

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 158 - Stagecraft

Theory and application of current and traditional technical theatre practices. Training in stage carpentry, painting, and preproduction organization.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 168 - Theatre Production I

Application of technical-theatre practice in scenic construction, painting, lighting, sound, costuming, and stage management. Students will be assigned to work on experimental and major stage productions. May be repeated for credit.

Cr. 1.

Hours

Lab. 6.

Must take 4 semesters of this course, 4 credits total.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 213 - Voice for the Actor

Designed to heighten the actor's awareness of the vocal instrument. Elementary vocal techniques will be practiced to expand the student's vocal flexibility and range. Emphasis on freeing habitual vocal tensions and teaching the student the fundamentals of vocal health.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

THTR 351 - Costume Techniques I

A project approach to the basic practices used in the construction of the theatrical costume and its accessories.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 440 - Beginning Directing

A study of the theory of theatrical direction; script, beat, and character analysis. Rehearsal techniques and directorial approaches will be examined. Applied work in scene directing projects.

Preparation for Course

P: THTR 201 and 138.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

THTR 501 - Stage Management

A combination of lectures on and practical experiences in planning and conducting the rehearsal sequence leading to the running of a production.

Preparation for Course

P: junior standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

One of the following Design Courses: Credits: 3

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

Emphasis Area Credits: 18

Credits from emphasis area below

Elective Courses Credits: 31-49

- Sufficient elective credits to bring total to 124.

Total Credits: 124

Emphasis Areas

Acting (18 credits)

THTR 238 - Acting II

Emphasis is on developing a character within a truthful reality based on the given circumstances of the script. Students will be challenged through scene-work, monologue preparation, and script analysis that connect the actor's internal choices to the external needs of the character. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 138 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 323 - Acting: Movement for the Actor

Designed to heighten body awareness in movement and stillness. Characterization techniques will be practiced that expand the student's flexibility, agility, and range of self-expression. Emphasis on freeing habitual tension patterns through the exploration of expressive movement.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

Hours

Class 1, Lab. 3.

THTR 336 - Rehearsal and Performance II

The study and practice of rehearsal techniques and stage performance. Students will be assigned to acting and stage-management duties in major stage productions. May be repeated for credit.

Preparation for Course

P: THTR 136.

Cr. 1-2.

Hours

Lab. 3 or 6.

THTR 338 - Acting III

Professional acting studio. Advanced character development focusing on the demands of period styles work. Possible styles to be covered include Greek Theatre, Restoration/Comedy of Manners, Elizabethan, and Contemporary Realism. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 238, 213 or 323 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 413 - Advanced Voice for the Stage

Advanced work in vocal production for performance. Emphasis on development of the full resonant voice, vocal power and range, and standard American speech. Special attention paid to application of knowledge to various performance situations and environments.

Preparation for Course

P: THTR 213 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 438 - Acting IV

Professional acting studio. Professional issues class preparing the advanced acting student for the rigors of the professional and graduate-level theatre arenas. Students will explore the skills of monologue auditions, cold readings, improvisational auditions, and interviews, as well as headshot and resume development. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 338 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

Choose one of the following dance courses

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

Design and Technology (18 credits)

THTR 264 - Rendering Techniques

A project approach to the development of the student's ability to pictorially represent ideas through drawing, drafting, painting, etc. Emphasis on clarity of intention and effective presentation of ideas through various media and techniques.

Preparation for Course

P: theatre major.

Cr. 3.

THTR 365 - Period Style for the Theatre I

The study of developments in the history of dress, decor, and architecture from the primitive through the 17th century. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 366 - Period Style for the Theatre II

The study of developments in the history of dress, decor, and architecture from the 18th century through the present. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

Two of the following: Credits: 6

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

One of the following: Credits: 3

THTR 560 - Advanced Scenic Design

Advanced study of the principles of design and their application to specific staging problems.

Preparation for Course

P: THTR 360 or consent of instructor.

Cr. 3.

Hours

Class 1, Lab. 4.

Dual Level Course

Undergraduate-Graduate

THTR 561 - Advanced Costume Design

Advanced study of the principles of costume design and their application to specific problems.

Preparation for Course

P: THTR 361 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

Dual Level Course

Undergraduate-Graduate

THTR 562 - Advanced Light Design

Advanced study of the principles of light design and their application to specific lighting problems.

Preparation for Course

P: THTR 362 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1 (with 2 hours experiential).

Dual Level Course

Undergraduate-Graduate

Directing (18 credits)

THTR 136 - Rehearsal and Performance I

Study and practice of rehearsal techniques and stage performance. Students will be assigned to acting and stage management duties in stage productions. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-2.

Hours

Lab. 3 or 6.

THTR 238 - Acting II

Emphasis is on developing a character within a truthful reality based on the given circumstances of the script. Students will be challenged through scene-work, monologue preparation, and script analysis that connect the actor's internal choices to the external needs of the character. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 138 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 323 - Acting: Movement for the Actor

Designed to heighten body awareness in movement and stillness. Characterization techniques will be practiced that expand the student's flexibility, agility, and range of self-expression. Emphasis on freeing habitual tension patterns through the exploration of expressive movement.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

Hours

Class 1, Lab. 3.

THTR 365 - Period Style for the Theatre I

The study of developments in the history of dress, decor, and architecture from the primitive through the 17th century. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 366 - Period Style for the Theatre II

The study of developments in the history of dress, decor, and architecture from the 18th century through the present. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 540 - Advanced Directing

Application of principles of directing to the various types of drama; laboratory practice in directing plays for experimental production.

Preparation for Course

P: THTR 440.

Cr. 3.

Hours

Class 2, Lab. 2.

Dual Level Course

Undergraduate-Graduate

Choose one of the following design courses:

THTR 360 must be taken here if not taken in the Theatre B.A. Core

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

Visual Communication and Design

Program: B.F.A.

Department of Visual Communication and Design

College of Visual and Performing Arts

Visual Arts Building 213 ~ 260-481-6709 ~ www.ipfw.edu/vpa/vcd

The student learning outcomes for the degree are as follows:

- Visual Communication and Design provides an exceptional professional degree program which combines creative development in an artistic discipline with career preparation.

- Visual Communication and Design students demonstrate:
 - effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
 - visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
- Visual Communication and Design students demonstrate:
 - effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
 - visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
 - critical thinking and problem solving while also evaluating their ideas and technological competencies.
 - artistic and scholarly collaboration with continuous personal growth to the highest levels of personal integrity and professional ethics.
 - knowledge and skills based upon an understanding of historical traditions that formed one's own and other cultures
 - a commitment to mutual respect through free and open visual inquiry and communications.

The Bachelor of Fine Arts program includes general education, art/design history, visual art, and design studio courses and offers concentrations in computer art and design, graphic design, and photography.

Students are eligible for admission to the B.F.A. major after (1) completing 45 credits of study with a grade of C or better and a cumulative G.P.A. of 2.5 overall or higher and 3.0 in all required VCD and FINA courses and (2) receiving approval for admission by the faculty after a portfolio review. A student may not enroll in any course numbered 300 or above until these criteria are met.

Admission

The student must meet the requirements of IPFW. Admission to the Department of Visual Communication and Design does not confer acceptance to the B.F.A. major. Newly admitted students are assigned to either a pre-B.F.A. or A.S. program. Later acceptance to the B.F.A. area of concentration is dependent upon satisfying the requirements of a portfolio review.

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative reasoning course Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Art/Design History Credits: 12

- Credits in art/design history courses numbered 300 or above: 6

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area of Concentration: Studio and Electives Credits: 75

Computer Art and Design

- Studio Electives in VCD or FINA Credits: 24

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

PHIL 275 - The Philosophy of Art

A survey of the principal theories concerning the nature, function, and value of the arts from classical times to the present.

Cr. 3.

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize

phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

VCD P243 - Photography Fundamentals

This course is designed to introduce the student to the basic understanding of photography in relationship to both the fine arts and the application of photography to advertising. Basic use of the camera and the darkroom will be introduced.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P356 - Package Design

Problems in package design from product concept to finished art work.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P357 - Display and Design

Problems in exhibition and display design including window, floor, and point of sale as well as sets for photography, film, and television production; other specialized structures such as architectural graphics and signage included.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P476 - Three-Dimensional Computer Modeling

Concentration on three-dimensional modeling and environments - object building and manipulation, lighting, atmosphere, and surface mapping. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P478 - Computer Animation

Concentration on three-dimensional computer animation concepts and methods, such as paths, cameras, objects in motion and transformation, animated textures, etc. Individual and collaborative animation problems will be examined. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3.

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

Graphic Design

- Studio Electives in VCD or FINA Credits: 15

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P226 - Painting Fundamentals II

Watercolor painting class. Introduction to painting methods and media and the further application of the basic principles of composition through varied problems from still life, landscape, memory, and imagination.

Preparation for Course

P: FINA P122, P124, and P152.

Cr. 3.

VCD P253 - Principles of Graphic Design I

Familiarity with the visual vocabulary and the elements of the visual language. The expression of the elements of line, shape, texture, space, and color will be developed through a series of exercises. Different problems in building visuals provide training that artists need to make individual, yet clear, expressive statements.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P254 - Principles of Graphic Design II

Continuation of P253 with emphasis on more involved projects utilizing typography, layout, symbols, and illustration: Calendars, advertising campaigns, publications, typographical/illustrated books, and multicolor projects.

Preparation for Course

P: P253.

Cr. 3.

Hours

Studio 3,

VCD P261 - Layout and Finished Art

Assignments beginning with rough comprehensives, completion through finished art work, paste-ups, and art for reproduction.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P271 - Illustration I

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P272 - Illustration II

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P356 - Package Design

Problems in package design from product concept to finished art work.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P357 - Display and Design

Problems in exhibition and display design including window, floor, and point of sale as well as sets for photography, film, and television production; other specialized structures such as architectural graphics and signage included.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P371 - Illustration III

Advanced illustration projects tied into studio-type situations with emphasis on production problems.

Preparation for Course

P: P272.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P372 - Illustration IV

Advanced illustration projects tied into studio-type situations with emphasis on production problems.

Preparation for Course

P: P272.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P453 - Graphic Design III

An advanced course dealing with a singular multifaceted design campaign. This senior project will involve all phases of a promotional campaign from logotype development to final project.

Preparation for Course

P: P254.

Cr. 3.

Hours

Studio 3,

VCD P454 - Graphic Design IV

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interest of each student. Emphasizing portfolio preparation, the faculty advises the student in the development of an artist's statement and the design campaign for the senior review, culminating in the B.F.A. thesis exhibit. May be repeated up to 18 credits.

Preparation for Course

P: P374.

Cr. 3.

Hours

Studio 3, Class 3,

Dual Level Course

Eligible for graduate credit.

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

(or additional studio)

Photography

- Studio Electives in VCD or FINA Credits: 30

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

PHIL 275 - The Philosophy of Art

A survey of the principal theories concerning the nature, function, and value of the arts from classical times to the present.

Cr. 3.

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P343 - Advanced Photography I

Advanced problems in photography determined by the student's skill, interests, and major objectives.

Preparation for Course

P: P243.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P344 - Advanced Photography II

Advanced problems in photography determined by the student's skill, interests, and major objectives.

Preparation for Course

P: P243.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P443 - Advanced Photography III

Individual problems in photography. May be repeated for up to 18 credits.

Preparation for Course

P: P344.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

Dual Level Course

Eligible for graduate credit.

VCD P444 - Advanced Photography IV

Individual problems in photography. May be repeated for up to 18 credits.

Preparation for Course

P: P344.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Dual Level Course

Eligible for graduate credit.

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

(or additional studio)

Senior Project Credits: 6

Majors must complete a senior project in the elected area of concentration. This two-semester course requires of the student a project incorporating an in-depth study and exploration of an artistic endeavor. The senior project culminates in a B.F.A. thesis exhibition that is judged by the faculty and reviewed by the public. An artist's statement and project description is a requirement of the exhibition installation.

VCD P450 - Senior Project

Major thesis required of fourth-year students. Subject must be approved by department chairperson. A senior exhibit of a certain number of works in major area is also required prior to graduation.

Preparation for Course

P: senior standing in visual communication and design.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

Women's Studies (B.A.)

Program: B.A.**College of Arts and Sciences**

Classroom-Medical Building 35F ~ 260-481-6711 - www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- demonstrate understanding of feminist approaches to research and learning in at least two disciplines
- demonstrate understanding of major categories of feminist critical analysis, such as gender, race, and class
- demonstrate understanding of how traditional fields of study or artistic canons are expanded and reshaped when the contributions of women are taken into consideration

- demonstrate the ability to think critically about issues in feminism past and present

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

In addition to the B.A. program, an Associate of Arts with a concentration in women's studies is available at IPFW. See College of Arts and Sciences in Part 4 for further information.

To earn the Bachelor of Arts with a major in women's studies, you must satisfy the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses. Only women's studies courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in WOST) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in WOST or cross-listed courses)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Additional credits in Western tradition Credits: 3

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.
(credits included in Major Requirements, below)

Core and Concentration (Major) Courses

- Credits in WOST or cross-listed humanities/visual arts Credits: 6
- Credits in WOST or cross-listed social science/science Credits: 6
- Additional credits in WOST or cross-listed courses Credits: 9

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

WOST W304 - Feminist Theories

Overview, in historical context, of feminist texts that analyze gender asymmetry in society; intersections of gender with other differences; and unequal distribution of power. In-dept study of key debates in Western feminism; selected

readings by influential non-Western feminists. Required for WOST major.

Preparation for Course

P: WOST W210 and W233 or equivalent, or instructor permission.

Cr. 3.

WOST W400 - Topics in Women's Studies

An interdisciplinary approach to selected ideas, trends, and problems in women's studies. The capstone course focuses on issues and controversies in the new scholarship on women. Specific topics announced in Schedule of Classes

Preparation for Course

P: junior or senior standing, 12 credits of women's studies course work or permission of instructor.

Cr. 3.

Variable Title

(V.T.)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Notes

A thematic focus of at least three courses (9 of the 30 credits in Major Requirements) must be selected in consultation with your women's studies advisor. The thematic focus provides coherence within this interdisciplinary major and can be defined in several ways: geographically (e.g., women in America, women in Western Europe); chronologically (e.g., women in antiquity, women of the Renaissance); by a category or issue (e.g., women and peace, women of color), and so on.

If you major in women's studies, you are also required to have a second major or one or more minors in other arts and sciences disciplines. If you elect to double-major in women's studies and another arts and sciences discipline, women's studies may be either your first or second major.

You may count the courses taken to fulfill this major toward arts and sciences distribution requirements wherever possible. However, no more than two courses may be applied to both majors.

If you elect to combine a women's studies major with one or more minors in other arts and sciences disciplines, you may count only two courses toward both the women's studies major and School of Arts and Sciences distribution requirements. Only one course may be counted toward both the women's studies major and any other minor.

Certificate

Accounting Post-Baccalaureate Certificate

Program: Certificate

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The Post-Baccalaureate Certificate in Accounting (P.B.A.) is offered by the Department of Accounting and Finance. Typically, students who pursue the P.B.A. are seeking an academic program of recognized quality that will help them prepare for careers in accounting. In combination with a bachelor's degree earned at an appropriately accredited institution, the P.B.A. meets the current minimum accounting educational requirements to sit for the Uniform Certified Public Accounting Examination in Indiana if students select the correct electives. Additional nonaccounting business credits may be required.

Admission Admission to the P.B.A. program is limited to holders of bachelor's degrees awarded by institutions that were accredited at the baccalaureate level by the North Central Association of Colleges and Schools (or comparable regional association) at the time the degree was granted.

To enroll in the program, you must first be formally admitted to IPFW. You must provide the IPFW admissions office with official transcripts documenting completion of your bachelor's degree.

Certificate Requirements Individuals interested in the P.B.A. program should check with either the department (Neff 350) or the school's Student Success Center (Neff 366) for specific program requirements and further information.

Special Academic Regulations for P.B.A. Students

Performance Standards With the exception of the minimum GPA for retention, P.B.A. students are held to the performance standards specified for students in undergraduate business programs. See Business later in this part of the Bulletin.

Course Waivers You may be eligible for waivers of course requirements based upon academic courses taken as part of your bachelor's program if those courses were completed within the past five calendar years.

Advanced Manufacturing Management Certificate

Program: Certificate

Department of Manufacturing & Construction Engineering Technology and

Interior Design

College of Engineering Technology, and Computer Science

Engineering, Technology, and Computer Science Building 221 ~ 260-481-4127 ~ www.ecet.ipfw.edu

This 18-hour credit certificate provides state-of-the-art training for working professionals who seek knowledge for career advancement in management and ownership roles in various manufacturing sectors - biomedical, military, automotive, electronics, construction, sports, and more.

To earn the certificate in advanced manufacturing management, you must satisfy the requirements of IPFW (), fulfill all course prerequisites, and satisfactorily complete the following courses with a grade of C or better, see Part 8

Program Requirements

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

IET 224 - Production Planning and Control

A survey of production inventory control procedures including material requirements planning, just-in-time methods, and project management.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3,

IET 267 - Work Methods Design

An introduction to workplace design and work measurement, including time and motion study, ergonomics, and process standardization.

Preparation for Course

P: 105.

Cr. 3.

Hours

Class 3,

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

IET 478 - Lean Manufacturing and Design

This course covers theory and practical aspects of lean manufacturing concepts. Students will be able to apply the basic lean concepts of 5S, waste elimination, inventory and setup reduction, visual management, standardized work, error proofing, lean layout design, value stream mapping, pull system, and lean measurables. The course includes required project work to be done in teams.

Preparation for Course

P: IET 224.

Cr. 3.

Advanced Microprocessors Certificate

Program: Certificate

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

Students earning the certificate will have

- The fundamental knowledge, skills, and techniques necessary to program and interface microcontrollers and microprocessors.
- The knowledge and ability to learn and interface other languages or microprocessor-based devices.

The certificate program in advanced microprocessors provides the theoretical and practical knowledge necessary to enable you to use microprocessors in industrial applications. Some highlights of the course sequence include electronic simulations and calculations; theoretical and laboratory applications of digital logic circuits, operational amplifiers, D/A and A/D converters, computer memory circuits; microprocessor assembly language, Visual Basic, and "C" programming; EEPROM and EPROM programming; microprocessors and microcontrollers; experimental applications; and applied, practical projects. Special emphasis is placed on embedded systems using microcontrollers.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, and computer networking.

To earn the certificate in advanced microprocessors, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses. This certificate is not available to any student with a major in EET (A.S. and/or B.S.) or CPET (B.S.).

Program Requirements

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

One of the following:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Advanced Microprocessors Project

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 19

American Studies Certificate

Program: Certificate in American Studies

College of Arts and Sciences

The student learning outcomes for the degree are as follows:

- Students will examine American culture from a range of local, regional, and global perspectives.
- Students will develop skills in interdisciplinary, holistic, connected critical thinking, making connections between different fields of academic inquiry, and producing sustained, reasoned, critical analysis of American culture, society, and history.
- Students will develop critical self-awareness of how they as individuals have been shaped by their particular American experience as well as a broader understanding of the diverse cultures of the United States and the influential factors of gender, race, ethnicity, and religious background.
- Students will be able to put theory into practice through service-learning initiatives at local, arts, government, charitable and other appropriate organizations.
- American Studies is also committed to enriching the life of the campus and community through sponsoring speakers, films, visiting artist, and so on, fostering connections between the campus and community organizations, and facilitating research collaborations between Americanist faculty from different disciplines at IPFW.

The mission of the American Studies program is to produce engaged and thoughtful citizens who are aware of how they have been shaped by the American experience and how they can be responsible citizens both in a multicultural United States and in a global environment. Students in American Studies will analyze the place of America within the larger scope within its borders by the contributions of a variety of national and ethnic group, and by analysis of how America relates to and is perceived by countries outside its own borders.

Program Requirements

Required introductory course

AMST A200 - Comparative American Identities

Examines the formation of legal, social, cultural, and economic identities within the United States and within U.S.-controlled territories. Who counts as "American"? To what ends have citizens and non-citizens assumed, claimed, or refused "American" identity? This course employs a comparative frame in considering elite and subordinated classes (and/or genders, races, ethnicities, sexualities); institutional and counter-cultural forms of self-definition; official history and alternative acts of collective memory.

Cr. 3.

Structure of other credits

- At least 6 credits must be at least at 300 level
- At least 6 credits must be taken in two additional areas of study outside of major field
- See History Department for list of pre-approved classes

Capstone

Choose one of the following courses

AMST A440 - Senior Seminar in American Studies

Cr. 3.

AMST A441 - America in Global Perspective

This course examines domestic and foreign interpretations of America as a world citizen from a variety of disciplinary perspectives. The course is intended to make students more aware of global issues and of what it means to be a "global citizen," and more understanding of views of America from outside its borders. Credit not given for both AMST A441 and INTL I441.

Cr. 3.

Total Credits: 18

Civic Education and Public Advocacy

Program: Certificate

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- The certificate links methods, theory, and skills-based training with active student learning and community-based projects.

To earn the Certificate in Civic Education and Public Advocacy you will be required to complete 19 credit hours with a grade of C or better in each course.

Program Requirements

POLS Y150 - Foundations of Community Advocacy

This course will prepare students to learn more than the basic structure of government. It will prepare students to learn the historical and philosophical foundations of our democracy and to question long-established ideas. It is designed to prepare a person to develop the skills necessary to be a community leader. (Credit not given for both Y150 and Y101.)

Cr. 1-3.

Credits: 1

Introduction To Government and Politics Credits: 3

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y306 - State Politics in the United States

Comparative study of politics in the American states. Special emphasis on the impact of political culture, party systems, legislatures, and bureaucracies upon public policies.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y307 - Indiana State Government and Politics

Constitutional foundations, political development, organizational and functional process and growth, and current problems of Indiana government as a focal point for understanding role of states as instruments of social policy. Readings, case studies, problems.

Cr. 3.

POLS Y308 - Urban Politics

Political behavior in modern American communities; emphasizes the impact of municipal organization, city officials and bureaucracies, social and economic notables, political parties, interest groups, the general public, and protest organizations on urban policy outcomes.

Cr. 3.

Variable Title

(V.T.)

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

SPEA V264 - Urban Structure and Policy

An introduction to urban government and public policy issues. Topics include urban government structure and policy making, the economic foundations and development of cities, demography of cities and suburbs, land-use planning, and other selected urban policy problems.

Cr. 3.

Essential Communication Skills Credits: 3

COM 210 - Debating Public Issues

Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods and bibliography, identification and analysis of issues, construction and organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.

Preparation for Course

P: 114.

Cr. 3.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

Promise and Problems of Democracy Credits: 6

(at least one political science course)

AFRO A210 - The Black Woman in America

A historical overview of the black woman's role in American society, including family, social, and political relationships.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

ENG L232 - Topics in Literature and Culture

Examination of a particular theme, such as the hero, death, or the city, and the techniques by which it is treated in various literary works, usually in more than one genre. May be repeated with different topics for a maximum of 6 credits.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Variable Title

(V.T.)

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L379 - American Ethnic and Minority Literature

A survey of representative authors and works of American ethnic and minority literature with primary focus on black, Hispanic, and Native Americans.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

HIST A306 - Sex Roles and Society in American History

What has it meant to be female or male in America? Examination of sex/gender roles, stereotypes, family life, sexual mores, work patterns, and popular culture. Reading in original sources and scholarly interpretations.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A313 - Origins of Modern America

Reconstruction, industrialism, immigration, urbanism, culture, foreign policy, progressivism, World War I.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A321 - History of American Thought I

Major themes in American intellectual history. 1607-1865: Puritanism, American Enlightenment, and the rise of democratic ideology.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A322 - History of American Thought II

Major themes in American intellectual history. 1865-1976: Social Darwinism, pragmatism, anti-intellectualism, 20th-century myths, and the new science.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A345 - American Diplomatic History I

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

PHIL 240 - Social and Political Philosophy

A study of some major social and political philosophers from Plato to contemporary authors. Issues such as justice, rights and freedom, community, and the "globalized" future will be considered.

Cr. 3.

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y381 - History of Political Theory I

An exposition and critical analysis of the major political philosophers and philosophical schools. I. From Plato to Machiavelli. II. From Machiavelli to the present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y382 - History of Political Theory II

An exposition and critical analysis of the major political philosophers and philosophical schools. I. From Plato to Machiavelli. II. From Machiavelli to the present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y383 - American Political Ideas I

American political ideas from the colonial period to the founding period.

Cr. 3.

POLS Y384 - American Political Ideas II

American political ideas from the founding period to the present.

Cr. 3.

SOC S300 - Race and Ethnic Relations

Detailed examination of relations between and among racial and ethnic groups; sociological theories of prejudice and discrimination; comparative analysis of diverse systems of intergroup relations.

Preparation for Course

P: SOC S161; either SOC S260 or ENG W233 (or equivalent), or consent of instructor.

Cr. 3.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S317 - Social Stratification

Nature, functioning, and maintenance of systems of social stratification in local communities and societies. Correlates and consequences of social class position and vertical mobility.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S338 - Sociology of Gender Roles

Exploration of the properties, correlates, and consequences of gender roles in contemporary societies. Emphasis on defining gender roles, tracing their historical development, considering their implications for work, marriage and fertility, with cross-cultural comparisons.

Preparation for Course

P: SOC S161 ; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Policy Formation and Analysis and Government Operations Credits: 3

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

(topic must be approved)

POLS Y301 - Political Parties and Interest Groups

Examination and evaluation of the behavior of political parties, voters, interest groups, and other institutions and procedures by which Americans try to control their government.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y303 - Formation of Public Policy in the United States

Processes and institutions involved in formation of public policy in a democratic society, with emphasis on American experience.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y312 - Workshop in State and Local Government

Intensive study of administrative problems such as financial administration, public health, and welfare.

Preparation for Course

P: POLS Y103 or consent of instructor.

Cr. 3.

POLS Y317 - Voting, Elections, and Public Opinion

Determinants of voting behavior in elections. The nature of public opinion regarding major domestic and foreign policy issues; development of political ideology; other influences on the voting choices of individuals and the outcomes of elections; relationship among public opinion, elections, and the development of public policy. Credit not given for both Y316 and Y317.

Cr. 3.

POLS Y378 - Problems in Public Policy

Examines various substantive problems in the formulation and conceptualization of public policy. Both the policy and its impact are considered in the context of the entire political environment in which it operates. Examples are selected from various levels of government, not always confined to the United States. May be repeated once for credit.

Cr. 3.

Variable Title

(V.T.)

POLS Y394 - Public Policy Analysis

Place of theory and method in examining public policies in relation to programs, institutional arrangements, and constitutional problems. Particular reference to American political experience.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

(topic must be approved)

SPEA V365 - Urban Development and Planning

This course identifies the major problems associated with urban development in the United States and investigates the potential of public planning strategies and tools to deal with these problems. An emphasis is placed on the application of analytical approaches to problem definition and solution.

Preparation for Course

P: V264, K300.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

Capstone Course Credits: 3

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

POLS Y482 - Practicum

Faculty-directed study of aspects of the political process based upon field experience. Directed readings, field research, research papers. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

Computer Networking Certificate

Program: Certificate

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

Students earning the certificate will have

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current computer networking software and equipment.
- The knowledge and ability to continue learning the principles and applications of future network operating systems and devices.

This certificate program in computer networking provides the theoretical and practical knowledge necessary to enable you to work with computer operating systems, data communication and network equipment, networking protocols, network system administration, local area networks, wide area networks, and network security.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in advanced microprocessors, computer-controlled systems, and electronic communications.

To earn the certificate in computer networking, you must fulfill all course prerequisites, and successfully complete the following courses with a grade of C or better in each course. This certificate is not available to any student with a major in CPET (B.S.).

Program Requirements

CPET 181 - Computer Operating Systems Basics

Introduction to computer operating systems, organization and functions of hardware components, and system software. Topics include system commands, operating system interface, system utilities, shells programming, file systems and management, introduction to concepts, graphical user interface, device drivers, memory management, processes, concurrency, scheduling, multitasking and multiprocessing. Laboratory experiences include Microsoft Windows and UNIX.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

One of the following Credits: 3

CS 170 - C and Data Structures

The course will introduce the C programming language including the language syntax, the programming environment, basic data types, complex data types (pointer, array, structures, bit fields, and unions), macros, i/o, and functions. Program development will emphasize modularization, data abstraction, and selection and analysis of algorithms. Other topics include recursion, files, linked lists, stacks, queues, and binary trees. Course projects are related to common engineering and computer science applications. Course will not count toward graduation in the computer science department.

Preparation for Course

P: 160 or ENGR 110.

Cr. 3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

One of the following Credits: 4

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

(plus one-hour lab)

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

One of the following Credits: 3

CPET 384 - Wide Area Network Design

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

CS 374 - Computer Networks

The design and implementation of data communications networks. Topics include network topologies; message, circuit and packet switching; broadcast, satellite and local area networks; routing; the OSI model with emphasis on the network, transport, and session layers.

Preparation for Course

P: CS 274.

Cr. 3.

Computer Networking Project**CPET 499 - Computer Engineering Technology**

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government

agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 20

Computer-Controlled Systems Certificate

Program: Certificate

**Department of Computer and Electrical Engineering Technology &
Information Systems and Technology
College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current computer controlled devices.
- The knowledge and ability to continue learning the principles and applications of future computer controlled devices.

This certificate program provides theory and experiments on computer-controlled system design and implementation. Several methods of computer control including — programmable logic controllers (PLC) or Labview graphical programming, General Purpose Interface Bus control (GPIB, HPIB, or IEEE 488), and microcontroller-based systems — are studied. Highlights of the course sequence include data acquisition using low- and high-level languages, control-variable measurement using sensors, D/A and A/D conversions, ladder diagrams, design of pneumatic and hydraulic-controlled systems, sampling and reconstruction, and comparison of continuous and discrete time-controlled systems, and open- and closed-loop controlled systems.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in advanced microprocessors, electronic communications, and computer networking.

To earn the certificate in computer-controlled systems, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses with a grade of C or better. This certificate is not available to any student with a major in EET (A.S. and/or B.S.).

Program Requirements

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

One of the following Credits: 4

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 375 - Computer Controlled System Designs

A study of computer-controlled systems using microcontrollers, computer numerical control (CNC), and programmable logic controller (PLC). Topics include microcontroller-based control systems, pneumatic and hydraulic controlled systems, data acquisition, D/A and A/D conversions, ladder diagrams, sampling and reconstruction, Z transform, stability analysis techniques, continuous and discrete time-controlled systems, openloop and closed-loop controlled systems, CNC machines, and mechanical hardware.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3.

One of the following Credits: 4

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

Computer-Controlled Systems Project**CPET 499 - Computer Engineering Technology**

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 17

Critical Care Nursing Certificate

Program: Certificate

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

Career Steps

The Critical Care Nursing Certificate program is designed to provide advanced knowledge and skills in the specialty of critical nursing to registered nurses working in, or intending to work in, any acute care area of nursing; to licensed practical nurses with strong medical-surgical experience; and to student-nurses interested in learning about critical care nursing. Critical care nursing is a challenging and rewarding career. Credits earned for the Critical Care Nursing Certificate may be transferred into the Bachelor of Science with a major in nursing program at IPFW.

Admission Criteria

- Admission to the University
- Be a licensed R.N. or a student enrolled in second semester of medical/surgical nursing courses at IPFW/Parkview Department of Nursing may participate with permission of the program coordinator
- Complete Certificate Program application

The program coordinator is **Becky Salmon**, M.S., RNC, Associate Professor

To apply for the program on-line, fill out the Critical Nursing Program application form.

The primary objectives of this certificate are to provide:

- advanced knowledge and skills in the specialty of critical-care nursing to registered nurses and student nurses about to enter the workforce
- skills and knowledge in critical care to meet the growing challenge of providing care to increasingly sick patients within the managed-healthcare environment
- marketability of graduates with critical-care skills

To earn the certificate, you must:

- fulfill the requirements of IPFW (see Part 8)
- be a licensed RN. (Students enrolled in second-year nursing courses in the IPFW nursing program may participate with permission of the certificate program coordinator.)
- complete the following courses with a C or better:

Program Requirements

Nursing Core (13 credits)

NUR 245 - Basic Cardiac Dysrhythmias

This course is designed to educate the student in the theory and interpretation of cardiac monitor rhythms. Basic monitoring procedures and guidelines are taught. Emphasis is on the factors that determine whether a cardiac rhythm is normal or abnormal (dysrhythmia). Critical-thinking skills are utilized in identifying and prioritizing appropriate interventions related to the occurrence of dysrhythmias. This course is open to non-nursing students.

Preparation for Course

P: BIOL 203, 204.

Cr. 1.

NUR 311 - Intravenous Therapy

Intravenous Therapy is designed to prepare the associate degree nursing student to provide quality care to patients with infusion therapy. NUR 311 offers in-depth information on infusion therapy to complement learning in science and nursing courses in the nursing program. The student is able to experience infusion therapy during proctored laboratory and precepted clinical experiences.

Preparation for Course

P: 224 or 336.

Cr. 1.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 345 - Trauma Nursing

NUR 345 provides a comprehensive overview of the trauma patient. Course content emphasizes the epidemiology of trauma, mechanisms of injury, anatomy and physiology of systems as they relate to trauma, and the assessment and management of injuries. This course is designed to enhance the practitioner's knowledge, refine skills, and build a firm foundation of trauma nursing.

Preparation for Course

P: NUR 224 or 336.

Cr. 1.

Hours

Class 1,

NUR 359 - Disaster Healthcare

Introduction to disaster preparedness and the predictors of the types of injuries and illnesses related to various disasters. Presents information on biological, chemical, and radiological weapons, bioterrorism, environmental disasters, mental health and traumatic events, and homeland security. Discusses the roles of healthcare workers in a hospital, medical facility, and community agency at the time of a disaster and the recovery period. Prepares healthcare workers to respond to a disaster by discussing community hazards and vulnerabilities. Course is based on the altered standards of care in mass casualty events development by the Agency for Healthcare Research and Quality (AHRQ) and the Office of the Assistant Secretary for Public Health Emergency Preparedness, U.S. Department of Health and Human Services (HHS).

Preparation for Course

P: NUR 116 or 202.

Cr. 1.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

Supporting Courses (3 credits)

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

Approved Electives (3 credits)

(Credits in a course from nursing, SPEA, or the social sciences that better meets your goals may be substituted with the permission of the program coordinator)

One of the following Credits: 3

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 319 - Alternative and Complementary Therapies

This survey course examines the principles, practices, and outcomes of select alternative healing and complementary therapies. The influences of diverse cultural groups, from both the West and East, are examined in relationship to healing practices. Students will apply evidence-based criteria, including research findings from the National Institutes of Health (NIH)- National Center for Complementary and Alternative Medicine, to evaluate the risks and benefits of selected modalities.

Cr. 3.

NUR 399 - Special Topics

Hours, credit, and subject matter to be arranged by staff. Repeatable up to 9 credits.

Cr. 1-6.

Hours

Class 0-4, Lab. 0-6,

Variable Title

(V.T.)

Gerontological Nursing Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest,

menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

Total Credits: 19

Dental Assisting Certificate

Program: Certificate in Dental Assisting

Department of Dental Education

College of Health and Human Services

Neff Hall Room 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the certificate are as follows:

- Demonstrate the breadth and depth of knowledge in basic sciences, social sciences, and clinical practice to deliver comprehensive care to patients in the practice of dentistry.
- Demonstrate and incorporate problem-solving skills in critical thinking, interpretation, reasoning, questioning, and decision-making.
- Demonstrate competence in assessing, evaluating, planning, and treating oral conditions and diseases.
- Demonstrate effective written, oral, and multimedia skills to communicate effectively in diverse settings.
- Interpret, evaluate, and synthesize current scientific dental research and apply evidence-based reasoning skills.
- Comprehend and demonstrate current technology in the practice of dentistry, as it is constantly changing.
- Demonstrate the highest levels of ethical behavior, personal integrity, and professional ethics in the practice of dentistry and the patients that are under their care.
- Assume a leadership and collaborative role in the advancement of the dental profession through local, regional, national, and international communities and professional organizations.
- Demonstrate and apply the skills for life-long learning and professional development.

This program includes at least one semester of prerequisite courses and one year of dental assisting courses. The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association.

A Dental Assisting Certificate prepares you for a career as a dental health professional who may choose to specialize in any of the following areas of dentistry: chairside general dentistry, expanded functions dental assisting (restorative) in general or pediatric dentistry, orthodontics, oral surgery, periodontics, assist in dental surgery at area hospitals, endodontics, public health dentistry, dental sales, dental insurance, dental research, business assisting or office management, or clinical supervision. The program combines didactic, laboratory, and clinical courses. Graduates are eligible to take the national boards to become a Certified Dental Assistant (CDA) and take the state boards to obtain a dental radiology license in the State of Indiana.

Admission

Admission to IPFW does not confer admission to this program. To be admitted to the certificate program you apply separately to IPFW and the dental assisting program. Two observations in dental offices are required. See the

Department of Dental Education for application and observation forms. Prospective dental assisting students must complete IPFW prerequisite courses listed below or equivalent courses at another accredited college or university. These courses may not be graded on a pass/not-pass option. Remedial or developmental courses cannot be used to fulfill these prerequisite requirements. Because space in the dental assisting program is limited to 24 students per year, admission is competitive. Applications and two observations forms for selection into the dental assisting program must be received no later than March 1 of the year an applicant wishes to enter the program. The number of eligible applicants each year exceeds the number of spaces available.

Applicants must also make an appointment with a dental assisting advisor to discuss the program and receive current information regarding admission, prerequisite requirements, and possible degree completion options. To make an appointment with your advisor, log onto the dental education website <http://www.ipfw.edu/dental>, click on advisors and follow the instructions to find your academic advisor.

Class Selection Process

Requirements

- Have a minimum IPFW grade-point average (GPA) of 2.5 on a 4.0 scale in the 12 hours of pre-dental assisting curriculum. The GPA is calculated on only the 12 hours of pre-dental assisting curriculum taken at IPFW or at other Purdue University or Indiana University campuses. Applicants are ranked based on this GPA. This GPA does not include transfer courses.
- A minimum GPA does not guarantee admission. The actual GPA necessary for admission varies with the GPA distribution of the applicant pool and the number of available seats for admission.
- All transfer grades will be reviewed and evaluated in the admission process.
- First-priority consideration for program admission will be given to students who have completed all 12 hours of pre-dental assisting curriculum at IPFW or at other Purdue University or Indiana University campuses.
- Students must return the acceptance form by the deadline stated in the acceptance letter.
- Students who have not been accepted, but who are qualified, may reapply for admission.

University Preference

Students who complete all of their prerequisite courses at IPFW, Indiana University, or Purdue University will be considered first for entrance into the program.

Students who complete their prerequisite courses at IPFW, Indiana University, or Purdue University and other colleges/universities will be considered second for entrance into the program.

Students who complete all their prerequisite courses at other colleges/universities that are not IPFW, Indiana University, or Purdue University courses will be considered third for entrance into the program.

Prerequisite Courses

Prerequisite and preferred admission courses must be completed by May 18 for admission into the class that begins each fall. A minimum prerequisite GPA of 2.5 and a minimum cumulative GPA of 2.0 is required for all applicants. Required courses may be repeated only one time and the second grade will be the grade used to calculate prerequisite GPA. Repeated courses will not be averaged.

To apply for the Dental Assisting Certificate program, you must complete the following prerequisite courses by MAY 18 and receive a grade of C or better.

The pre-dental assisting curriculum is:

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Preferred Admission Courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

DAST A122 - Introduction to Dentistry

An overview of the specialties of dentistry with specific lectures on cavity classification and nomenclature. Instrument nomenclature, principles of cavity preparation, the space-maintenance concept, management of the child patient, use of the rubber dam in direct and indirect pulp therapy.

Cr. 1.

Total Credits: 12-21

Program Requirements

After acceptance into the program, you must fulfill the requirements of IPFW (see Part 8) and Dental Education, and satisfactory complete the following courses with a grade of C or better:

DAST A111 - Oral Pathology, Physiology, and Anatomy

An overview study of the structure and function of the body starting with the basic tissues, organs, and organ systems followed by the mechanisms of disease with emphasis on oral pathology.

Cr. 1-2.

DAST A112 - Dental and Medical Emergencies and Therapeutics

A course including recognition and clinical experience of systemic emergencies. Comprehensive study of the physiological, toxicological, and therapeutic effects of drugs on living organisms, with emphasis on their rational application in the treatment of disease. Content includes discussions of drugs that are widely prescribed by physicians and dentists.

Preparation for Course

P: DAST A111.

Cr. 2.

DAST A121 - Microbiology and Asepsis Technique

An overview of microbiological aspects of health and disease with emphasis on sterile procedures and disinfection techniques.

Cr. 1-2.

DAST A131 - Dental Materials I

The physical and chemical properties of dental materials affecting their usage and clinical behavior. Study includes selection, characteristics, manipulation, and care of materials used in dentistry. A131 must precede A132.

Cr. 3.

Hours

Class 2, Lab 2.

DAST A132 - Dental Materials II

The physical and chemical properties of dental materials affecting their usage and clinical behavior. Study includes selection, characteristics, manipulation, and care of materials used in dentistry. A131 must precede A132.

Cr. 3.

Hours

Class 2, Lab 2.

DAST A141 - Preventive Dentistry and Nutrition

Etiology of prevalent oral diseases and prevention, with particular emphasis on plaque, plaque control, and fluorides. The effects of major nutrients on the physiologic body processes; applied nutrition in dental caries and periodontal disease. Clinical and laboratory experiences.

Cr. 2.

DAST A171 - Clinical Science I

A core course in dental nomenclature; historical developments in dentistry; role of assistant as member of the dental health team; dental specialties; charting the mouth; identification and utilization of instruments and equipment; principles of dental procedures and instrument transfer.

Cr. 4.

Hours

Class 2, Lab 4.

DAST A172 - Clinical Science II

Clinical chairside experience in extramural assignments with a seminar to provide opportunities for students to share experiences.

Preparation for Course

P: DAST A171.

Cr. 3-6.

Hours

Class 1, Clinical 18.

DAST A182 - Practice Management, Ethics, and Jurisprudence

Dental practice management in reception procedures, appointment control, and clinical and financial records; purchasing and inventory control. Study of the legal and ethical aspects of dentistry.

Cr. 2.

DHYG H214 - Oral Anatomy

A study of the morphology, structure, and function of deciduous and permanent teeth and surrounding tissues, also including osteology of maxilla and mandible, nerve and vascular supply of teeth, muscles of mastication, with reinforcing laboratory clinical application.

Cr. 3.

Variable Title

(V.T.)

DHYG H242 - Introduction to Dentistry - Specialties

An overview of the specialties of dentistry with specific lectures on cavity classification and nomenclature. Instrument nomenclature, principles of cavity preparation, the space-maintenance concept, management of the child patient, use of the rubber dam in direct and indirect pulp therapy.

Cr. 1.

DHYG H303 - Radiology (lecture and lab)

Principles associated with production of X-rays and manipulation of X-ray equipment.

Cr. 1-2.

Hours

Class 2, Lab 2.

DHYG H305 - Radiology Clinic I

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1-2.

Hours

Class 1, Clinical 3.

Total Credits: 35

Electronic Communications Certificate

Program: Certificate

Department of Computer and Electrical Engineering Technology & Information
Systems and Technology

College of Engineering, Technology, and Computer Science

*Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~
www.ecet.ipfw.edu*

The student learning outcomes for the certificate are as follows:

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current electronic communications devices.
- The knowledge and ability to continue learning the principles and applications of future communications devices .

This certificate program provides theory and experiments for electronic communications topics ranging from low-frequency applications to fiber optics. It includes courses in analog communications (AM and FM), digital communications (satellite communications and digital TV), microwaves (high-frequency communications), and fiber optics. Computer programs such as SPICE, ACOLADE (digital communications), SYSCAD (analog communications), TOUCHSTONE (RF and microwave systems), and Microwave Office are incorporated into the curriculum.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in advanced microprocessors, computer-controlled systems, and computer networking.

To earn the certificate in electronic communications, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses. This certificate is not available to any student with a major in EET (A.S. and/or B.S.).

Program Requirements

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSpice, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

And one of the following (4 Credit Hours)

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, m frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Electronic Communications Project

ECET 499 - Electrical Engineering Technology

Hours and subject matter to be arranged by staff.

Cr. 1-9.

Hours

Class 0-4, Lab. 3-9.

Variable Title

(V.T.)

Notes

Repeatable up to 9 credits

Total Credits: 17

Ethnic and Cultural Studies Certificate

Program: Certificate in Ethnic and Cultural Studies College of Arts and Sciences

Classroom-Medical Building 154 ~ 260-481-6746 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- The holder of this certificate will be able to demonstrate understanding of the religious and cultural institutions specific to Native American and/or African American society.

This certificate is available to all IPFW students interested in understanding the institutions, histories, and cultures of American ethnic groups.

To earn the certificate, you must (1) complete all requirements for a bachelor's degree, and (2) complete, with the approval of the program's advisory committee, 18 additional credits from the following list with a grade of C or higher in each course. No more than one independent-reading or internship course may be taken from the same department.

Credits in six of the following courses: 18

- EDUC E400 - Education in the Inner City
- EDUC E403 - Education in the Inner City Practicum
- MUS M395 - Contemporary Jazz and Soul Music

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ECON E360 - Public Finance: Survey

Study of the role and scope of government expenditures and taxation. Topics include public goods, externalities, income redistribution programs, and major elements of taxation.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F220 - Introduction to American Folklore

The folk cultures of the United States. The art and traditional philosophies of Indians, European-Americans, Afro-Americans, and occupational groups. The adaptation and interrelation of distinct American cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST T425 - Topics in History

Intensive study and analysis of selected historical issues and problems of limited scope from the perspective of arts and humanities. Topics will vary but will ordinarily cut across fields, regions, and periods. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

PHIL 493 - Interdisciplinary Undergraduate Seminar

Subject matter will vary.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for credit.

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

SOC S300 - Race and Ethnic Relations

Detailed examination of relations between and among racial and ethnic groups; sociological theories of prejudice and discrimination; comparative analysis of diverse systems of intergroup relations.

Preparation for Course

P: SOC S161; either SOC S260 or ENG W233 (or equivalent), or consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

Total Credits: 18

Gerontology Certificate

Program: Certificate in Gerontology
College of Arts and Sciences

Classroom-Medical Building 135 ~ 260-481-5451 ~ www.ipfw.edu/gerontology/

The student learning outcomes for the degree are as follows:

- Students will demonstrate knowledge of gerontology including but not limited to biological, social, and psychological issues that impact on older adults and those who work with and care for them.
- Students will demonstrate knowledge of the basic study of aging in several disciplines, complementary areas such as nutrition and medical ethics, and applications dealing with health and social issues involving older adults.
- Students will demonstrate the ability to apply gerontological knowledge, through a practicum experience in which the student works with, or on behalf of, older adults in a campus, community, or agency setting that serves this population.

A certificate in gerontology is available to all IPFW students earning undergraduate degrees. It is also available as a stand-alone program. The multidisciplinary program provides basic academic courses on aging, as well as applied courses on health and social issues involving older adults. A practicum component involves applied work in a setting serving older individuals.

The Gerontology Certificate is comprised of 18 credits. The required introductory course (3 credits) provides a foundation in biological, psychological, social, and applied aspects of aging. An additional 12 credits are chosen by the student from a variety of disciplinary courses relevant to gerontology. The final 3-credit requirement is a practicum that involves applied work in a setting serving older individuals.

To earn the certificate, you must:

- meet all regular IPFW admission requirements (refer to Part 8 of the undergraduate Bulletin); and
- complete the following 18 credits with a grade of C or better in each course.

To be entered into the program, you must meet with the gerontology program director. The program of study must be approved by the gerontology program director. All prerequisites must be satisfied before enrolling in any of the courses listed below.

Program Requirements

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

Credits from the following Credits: 12

(you may substitute independent or directed study in gerontology or aging in a suitable department as approved by the gerontology program director):

ANTH E421 - The Anthropology of Aging

This course explores age and the aging process cross-culturally by looking at the specific cultural context in which individuals age and by analyzing similarities and differences across cultures.

Cr. 3.

AUS 430 - Speech-Language Disorders in Healthcare Settings

Presents speech-language disorders across the lifespan encountered in a variety of healthcare settings. Discusses the etiology, evaluation, and management of these disorders. Addresses administrative structures, team approaches, and reimbursement issues in healthcare settings.

Preparation for Course

P: 5 semester credits in speech pathology or consent of instructor.

Cr. 3

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems. Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

FNN 302 - Nutrition Education

Basic nutrition and its application to current trends and controversies. Emphases placed on teaching techniques and communicating sound nutritional concepts to the lay audience. For nonscience majors.

Cr. 3.

Or

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

GERN G399 - Independent Study in Gerontology

This course provides an opportunity for students to independently pursue a gerontological problem or issue. With guidance from an instructor, students identify a topic they would like to study in-depth. This course is especially appropriate for gerontological interests that span more than one discipline.

Preparation for Course

P: GERN G231 and consent of instructor.

Cr. 3

Variable Title

(V.T.)

GERN G499 - Topics in Gerontology

Specific topics announced each semester the course is offered. Examples of course content include legal and economic aspects of aging; health issues in aging; and business and marketing issues and older adults. May be repeated once for credit.

Preparation for Course

P: GERN G231.

Cr. 1-6.

Variable Title

(V.T.)

MUS L340 - Music Therapy in Healthcare Settings

Study of music therapy methods and materials commonly used in assessment and treatment of children, adults, and the elderly in healthcare settings, with emphasis on stress management, relaxation, rehabilitation, and pain management.

Preparation for Course

P: X296, X298, or permission of director of Gerontology Program or director of Music Therapy Program.

Cr. 3.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

NUR 399 - Special Topics

Hours, credit, and subject matter to be arranged by staff. Repeatable up to 9 credits.

Cr. 1-6.

Hours

Class 0-4, Lab. 0-6,

Variable Title

(V.T.)

Gerontological Nursing

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 371 - Death and Dying

A multidisciplinary, empirically-based consideration of emotions, behaviors, and cognitions related to death and the process of dying. Topics include cultural and historical differences in concepts of dying, grief, and bereavement; individual differences related to preparation, adjustment, and coping, as well as discussion of special topics (e.g., hospice care, physician-assisted suicide, media coverage of death and dying).

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

SOC S314 - Social Aspects of Health and Medicine

Group characteristics in the causation, amelioration, and prevention of mental and physical illness, and the social influences in medical education, medical practice, and hospital administration.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S331 - Sociology of Aging

Social aspects of aging and older adulthood. Topics include myths about aging; the process of aging, sexual behavior, social relationships, family relationship, religious activities, and leisure of the elderly.

Preparation for Course

P: SOC S161; either ENG W233 or SOC 260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA H411 - Chronic and Long-Term Care Administration

Administering programs across the continuum of care including nursing homes, hospice, home health, and assisted living; Medicare and Medicaid financing; quality improvement; care management; and needs of special populations, particularly, vulnerable elders.

Cr. 3.

Practicum in a gerontological setting Credits: 3

approved by the gerontology program director. The setting must involve, or relate to, individuals 60 years of age or older. You may choose either a practicum or internship course offered by a department, or the gerontology program practicum course, GERN G494, if you are an interdisciplinary student or are pursuing only the Gerontology Certificate. Approved courses are indicated below. Note that some of these courses may be taken only by those majoring in the sponsoring discipline.

AUS 549 - Clinical Practice in Speech/Language Pathology I

The second in a series of practicum courses designed to provide instruction and practical experience in fundamental diagnostic and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 420, 449, 521 or equivalents, with a grade of B or better in each course. R: AUS 430 or equivalent and consent of instructor.

Cr. 1-8.

Hours

Class 1, Lab. 1-8.

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

GERN G494 - Gerontology Practicum

Field experience in a setting involving adults 60 years or older, according to the interests and objectives of each student. Work will be supervised by the instructor and setting personnel. Provides an opportunity to apply gerontological theory and findings in a practical context.

Preparation for Course

P: GERN G231 and consent of instructor.

Cr. 3.

HSRV 400 - Internship I

This course will provide experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of case management skills including intake, client assessment, and development and implementation of intervention plans. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 315, 320; P or C: 401.

Cr. 1-4.

HSRV 401 - Internship Seminar I

This course will focus on professionalism, ethical issues, and social welfare policy as applied with human service clients and agencies. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

C: HSRV 400.

Cr. 1.

HSRV 450 - Internship II

This course will provide advanced experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of program evaluation, legal implications related to human service practice, and management issues related to directing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 451.

Cr. 2-4.

HSRV 451 - Internship Seminar II

This course will provide a forum for discussion of advanced theories and skills applicable to developing, assessing, and managing human service agencies. Topics will include program evaluation, legal implications related to human service practice, and management issues related to implementing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 450.

Cr. 1.

HTM 301 - Hospitality and Tourism Industry Practicum

Training and practical experience at the entry level, totaling at least 300 hours in an approved hospitality or tourism operation.

Preparation for Course

P: 6 credits in HTM or consent of program coordinator.

Cr. 1.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

MUS L353 - Music Therapy Practicum II

Students provide services to elderly/geriatric individuals or groups focusing on the development of treatment interventions and plans. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L254, X296, C298.

Cr. 1.

Session Indicators

(fall)

MUS L423 - Advanced Music Therapy Practicum

An advanced, intensive field work course where students provide two or three hours of clinical music therapy services in a community agency. May involve program planning, techniques development, and/or a research project. Development of a learning contract is required. Liability insurance required.

Preparation for Course

P: L340, L421, permission of music therapy director.

Cr. 1-3.

Session Indicators

(fall, spring)

MUS L424 - Music Therapy Internship

Acceptance to internship program required prior to registration. A six-month internship completed under the supervision of a professional and credentialed music therapist at an AMTA approved clinical site. Course must be completed within two years of the completion of all course work. Internship must be completed before conferring of the degree. Liability insurance required.

Preparation for Course

P: All degree-required course work must be successfully completed prior to registration.

Cr. 1-2.

Session Indicators

(fall, spring, summer)

NUR 490 - Nursing Practicum

Provides the student an opportunity to develop an individualized practicum experience in the specialty of geriatrics. Based on the student's goals, sites are selected through faculty and student collaboration. One credit hour requires 45 hours of clinical practicum.

Cr. 1-3.

PHIL 480 - Practicum in Applied Ethics

Students will be assigned a definite task relevant to their educational interests in applied ethics. Students may be placed in appropriate cooperating local social-service agencies, educational institutions, legal services offices, businesses, or medical facilities. Work will be supervised by the department and the agency. Research and written reports will be required.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

POLS Y482 - Practicum

Faculty-directed study of aspects of the political process based upon field experience. Directed readings, field research, research papers. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

PSY 480 - Field Experience in Psychology

Supervised volunteer field work experiences in a setting appropriate to students' interests and goals. Intended as an opportunity to integrate theory and practice. (May be repeated once for credit with permission of instructor.)

Preparation for Course

P: consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

Total Credits: 18

International Studies Certificate

Program: Certificate in International Studies
College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6860 or 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Demonstrate an appreciation of the histories and cultures of other nations and the various means used to promote and maintain normal relations among them.
- Understand the impact of individual decisions on the world and world events on the individual.
- Demonstrate the ability to think critically about major international issues.

A certificate in international studies is available to all IPFW students who are interested in developing greater understanding of the histories and cultures of other nations and in studying the various means used to promote and maintain normal relations among them. You must be at least a sophomore in good standing to apply to this program.

To earn this certificate, you must complete the following credits with a grade of C or higher in each course as part of your bachelor's degree program:

Program Requirements

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Choose from the following Credits: 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E340 - Introduction to Labor Economics

Examines theories of wage and employment determination. Analysis of the impact of unions and other institutional factors on these theories; labor market imperfections; labor mobility; impact of government policies on labor behavior.

Preparation for Course

P: ECON E201; introductory statistics; junior class standing.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ILCS I208 - International Cinema

In this course students will study international cinema in order to increase their critical thinking, analytical, and communicative ability through reading and writing about films made outside of the United States. It will focus on the international filmmakers that work consciously to express their own sense of national identity.

Cr. 3.

ILCS I330 - Cultural Crossroads: Comparative International Cultures

In this course students will study in depth a topic of international significance in order to increase their thinking, analytical ability, and cultural competence.

Cr. 3.

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

POLS Y374 - International Organization

Examines assumptions about the causes, functions, results, and structures of international (intergovernment) organizations. Theory is combined with case study of the United Nations particularly. The European Community and regional organization examples provide a basis for understanding an evolving phenomenon.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

SOC S308 - Introduction to Comparative Sociology

Social organization of modern societies. Distinctions and broad cross-cultural comparisons between Western and non-Western social systems. Methods of cross-cultural analysis.

Preparation for Course

P: SOC S161 and ENG W233 or SOC S260 (or equivalent), or consent of instructor.

Cr. 3.

Credits from the following in a non-Western area Credits: 6

ANTH E310 - Introduction to the Cultures of Africa

Explores the vitality and diversity of African cultures today in communities ranging from town neighborhoods to remote villages and from desert to rainforest. Demonstrates the tenacity and creativity of human societies facing severe political, social, and ecological pressures, but also contributes new questions and answers to global debates about family values, ethnicity, terrorism, hunger, and economic growth.

Cr. 3.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E455 - Anthropology of Religion

Critical evaluation of current approaches to the analysis of religious myth, ritual, and symbolism. Problems in understanding religious beliefs of other cultures. Modern development of the anthropology of religion.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E479 - Indian Cultures of Peru

Detailed examination of past and present of one of the largest Indian populations in Latin America. Emphasis on the role of Indians in contemporary society.

Preparation for Course

P: consent of instructor.

Cr. 3.

ENG L113 - Introduction to African Literature

A study of African oral and written fiction, poetry, and drama. Designed to give students a basic knowledge of African literature and the issues surrounding it.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

HIST D410 - Russian Revolutions and the Soviet Regime

Russia on the eve of World War I; impact of World War I on Russian society; the revolutions of 1917; civil war and allied intervention in Russia; New Economic Policy and Five-Year Plans; the Stalin and Post-Stalinist eras.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST D426 - History of Balkans: 1914 to Present

First World War in the Balkans; politics, economies, and societies in the Balkan countries during the 20th century; Balkan unity movements; international events and World War II; rise of socialism in the region; era of cold war and detente; revolutions of '80s and '90s.

Cr. 3.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST E332 - African History from Colonial Rule to Independence

1750 to present. Slave trade, European imperialism; impact of Islam and Christianity, new state formations, reassertion of African culture and identity. Credit not given for both E332 and E432.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST F342 - Latin America: Evolution and Revolution

Hispanic America since independence, with emphasis on common problems of nation building in multi-racial former colonial societies; latifundia; dependency relationships; impact of industrialization; the conservative and revolutionary responses; 1810- present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F346 - Modern Mexico

Places contemporary Mexico in historical perspective, focusing on the 19th and 20th centuries. Topics include 19th century social and political movements, the causes and consequences of the 1910 revolution, the formation of Mexico's political system, problems of economic growth, and the changing patterns of gender, class, and ethnicity in Mexican society.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST F432 - 20th Century Latin American Revolutions

Revolutions, revolutionary movements, rapid social change, and modernization from Battle through Menem. Particular attention to the Mexican, Cuban, Bolivian, Guatemalan, Costa Rican, and Nicaraguan revolutions, to the Peron, Vargas, and Velasco Alvarado administrations and Cold War confrontations.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F447 - U.S.-Latin American Relations

Diplomatic and economic relations of the United States with Latin America, from American independence to the present. Evolution of Monroe Doctrine, Mexican War, development of trade and investments, establishment and abandonment of protectorates, Good Neighbor Policy, increased hemispheric interaction in the World War II and Cold

War eras.

Cr. 3.

Subject Area

[US] [OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST H202 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

HIST T335 - Topics in Non-Western History

Study and analysis of selected historical issues and problems in non-Western, Russian, and Latin American history from the perspective of the arts and humanities. Topics will vary. May be repeated for credit with different topics.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y339 - Middle Eastern Politics

Political culture and change in selected Middle Eastern and North African countries. Topics include political elites, traditional cultures, modern political ideology, institutions of political control, conflict management, and social reform policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y340 - East European Politics

Compares political change in the East European states, and emphasizes the legacies of authoritarianism and communism and the post-communist transition to democracy. Topics include the building of political institutions, the inclusion of citizens into the polity, the reform of the economy, the management of ethnic and social conflicts, and integration into the European Union. Eligible for graduate credit.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) Requirement.

Dual Level Course

Eligible for graduate credit.

REL 301 - Islam

Introduction to the "religious world" of Islam: the Arabian milieu before Muhammad's prophetic call, the career of the Prophet. Qur'an and hadith, ritual and the "pillars" of Muslim praxis, legal and theological traditions; mysticism and devotional piety, reform and revivalist movements.

Cr. 3

SOC S410 - Advanced Topics in Social Organization

An advanced course in social organizations, allowing for a more thorough coverage of selected topics, e.g. social stratification, formal organizations, urban social organization, education, religion, politics, demographics, social power, social conflict, social change, comparative social systems, race and ethnic relations, rural sociology, urban sociology, and work reorganization. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for use in fulfilling the Cultural Studies (Non-Western Culture) requirement only when the topic is Culture of China.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Additional Credits: 6

(may be chosen from the list below and/or from the list of non-Western courses above)

ANTH A460 - Topics in Anthropology

Cr. 1-3.

Variable Title

(V.T.)

ANTH E402 - Gender in Cross-Cultural Perspective

This course considers the meaning and social implications of gender in human society. Cultural definitions of "male" and "female" gender categories as well as associated behavioral and structural differentiation of gender roles will be analyzed using current anthropological concepts and theories.

Cr. 3.

CMLT C340 - Women in World Literature

Study of creative women writers who deal with unconventional themes. Comparison of images of female characters in 20th-century novels by French, English, and American women writers who challenge literary or social conventions. Focus on fiction or on another genre (e.g., drama, poetry, essay) each time course is offered. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

FINA H390 - Topics in Art History

In-depth projects and studies in special directions of art history, closely related to existing areas of concentration. May be repeated.

Cr. 3.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F305 - Asian Folklore

Forms and functions of folklore, folklife, or folk music in the traditional and developing societies of Asia. Folklore as a reflection of culture. Relationship between folklore forms and belief systems in Asia. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

HIST A345 - American Diplomatic History I

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A346 - American Diplomatic History II

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST B361 - Europe in the 20th Century I

Diplomatic, economic, intellectual, military, political, and social developments within Europe from World War I to World War II.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[WE] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST B378 - History of Germany II

Impact of French Revolution and Treaty of Vienna (1815); struggle between reaction and liberalism; unification; industrialization; imperialism; international friction; internal political conflicts; World War I; Weimar Republic; Hitler regime; problems since 1945.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[WE] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST H201 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

HIST H202 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

POLS Y335 - Western European Politics

Development, structure, and functioning of political systems in Western Europe. Political dynamics of European integration.

Cr. 3.

POLS Y350 - Politics of the European Union

Study of the politics of the European Union (EU). Assesses past and present dynamics of economic and political integration in Europe, the structure and work of European Union institutions, and EU public policies such as the Single Market, the common currency, common foreign and security policy, and trade.

Cr. 3.

POLS Y367 - International Law

Sources and consequences of international law; relationship to international organizations and world order; issues of national sovereignty, human rights, conflict resolution, international property rights, world trade, environmental change, and other topics.

Preparation for Course

P: Y109 or consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

POLS Y371 - Workshop in International Topics

Includes such topics as development of the international system, politics of food and populations, law of the sea, human rights, trade, U.S. foreign policy, United Nations issues, etc. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

POLS Y376 - International Political Economy

Theories about the interaction between the international economic and political systems are the subject of this course. Specific topics covered will include (among others) the politics of trade, aid, foreign investment, and international monetary affairs; theories of dependency and imperialism; the politics of international competition in specific industries; the stability/instability of international economic regimes.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Total Credits: 18

Foreign Language Requirement

In addition to the 18 credits stipulated above, students must demonstrate basic proficiency in a language other than English. The proficiency may be demonstrated by placing at the third-semester level or higher on the foreign language placement test, or by completing the first two semesters of a foreign language at the college level. Students who speak a language other than English are exempt from this requirement.

Labor Studies Certificate

Division of Labor Studies

Program Offered: Certificate in Labor Studies

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the certificate in labor studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses:

Program Requirements

- Credits in the Labor Studies Core: 15
- 3 credits in each Required Area of Learning Credits: 9
- Additional credits in one of the Required Areas of Learning Credits: 6

Credits from the Labor Studies Core Credits: 15

Credits from the following: 15

LSTU L100 - Survey of Unions and Collective Bargaining

A survey of labor unions in the United States, focusing on their organization and their representational, economic, and political activities. Includes coverage of historical development, labor law basics, and contemporary issues.

Cr. 3.

LSTU L101 - American Labor History

A survey of the origin and development of unions and the labor movement from colonial times to the present. The struggle of working people to achieve a measure of dignity and security will be examined from social, economic, and political perspectives.

Cr. 3.

LSTU L110 - Introduction to Labor Studies: Labor and Society

An introduction to the changing role of labor in society. The course will emphasize a comparative approach to issues confronting labor organizations.

Cr. 3.

LSTU L190 - The Labor Studies Degree

Required for all DLS majors. This course will provide an introduction to the labor studies degree and to the knowledge and skills needed by students to progress toward a degree in a reasonable time frame. Students will learn how to build a plan of study that takes advantage of both credit for prior learning and new learning opportunities.

Cr. 1.

LSTU L200 - Survey of Employment Law

Statutes and common law actions protecting income, working conditions, and rights of workers. Topics include workers' compensation, unemployment compensation, fair labor standards, Social Security, retirement income protection, privacy, and other rights.

Cr. 3.

LSTU L201 - Labor Law

A survey of the law governing labor-management relations. Topics include the legal framework of collective bargaining, problems in the administration and enforcement of agreements, protection of individual employee rights.

Cr. 3.

LSTU L203 - Labor and the Political System

Federal, state, and local governmental effects on workers, unions, and labor-management relations; political goals; influences on union choices of strategies and modes of political participation, past and present; relationships with community and other groups.

Cr. 3.

LSTU L205 - Contemporary Labor Problems

An examination of some of the major problems confronting society, workers, and the labor movement. Topics may include automation, unemployment, international trade and conglomerates, environmental problems, minority and women's rights, community relations, changing government policies.

Cr. 3.

LSTU L210 - Workplace Discrimination and Fair Employment

Examines policies and practices that contribute to workplace discrimination and those designed to eliminate discrimination. Explores effects of job discrimination and occupational segregation. Analyzes Title VII, ADA, and related topics in relation to broader strategies for addressing discrimination.

Cr. 3.

LSTU L220 - Grievance Representation

Union representation in the workplace. The use of grievance procedures to address problems and administer the collective bargaining agreement. Identification, research, presentation, and writing of grievance cases. Analysis of relevant labor law and the logic applied by arbitrators to grievance decisions.

Cr. 3.

LSTU L230 - Labor and the Economy

Analysis of the political economy of labor and the role of organized labor within it. Emphasis on the effects on workers, unions, and collective bargaining of unemployment investment policy, and changes in technology and corporate structure. Patterns of union political and bargaining response.

Cr. 3.

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

LSTU L250 - Collective Bargaining

The development and organization of collective bargaining in the United States. Union preparation for negotiations, bargaining patterns and practices, strategy and tactics; economic and legal considerations.

Cr. 3.

LSTU L251 - Collective Bargaining Laboratory

Designed to provide collective bargaining simulations and other participatory experiences in conjunction with L250.

Preparation for Course

P: or C: L250.

Cr. 1-3.

LSTU L255 - Unions in State and Local Government

Union organization and representation of state and municipal government employees, including patterns in union structure, collective bargaining, grievance representation, and applicable law.

Cr. 3.

LSTU L260 - Leadership and Representation

Organizational leadership issues for the union, community, and other advocate organizations. Analyzes leadership styles, membership recruitment, and leadership development. Examines the role of leaders in internal governance and external affairs including committee building, delegation, negotiations, and coalition building.

Cr. 3.

LSTU L270 - Union Government and Organization

An analysis of the growth, composition, structure, behavior, and governmental processes of U.S. labor organizations, from the local to national federation level. Consideration is given to the influence on unions of industrial and political environments, to organizational behavior in different types of unions, and to problems in union democracy.

Cr. 3.

LSTU L280 - Union Organizing

Explores various approaches and problems in private and public sector organizing. Traditional approaches are evaluated in light of structural changes in labor markets and workforce demographics. Topics range from targeting and assessments to committee building and leadership development.

Cr. 3.

Required Areas of Learning for Labor Studies

Arts and Humanities

- Afro-American Studies
- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Theatre
- Visual Arts

Sciences and Mathematics

- Anthropology (B200 and E445 only)
- Astronomy
- Biology
- Chemistry (except 100)
- Computer Science (includes BUS K200, K211, K212, K213, K214, K215, K216)
- Economics (E270 only)
- Entomology
- Forestry and Natural Resources
- Geography (G107 and G304 only)

- Geology
- Horticulture
- Mathematics (except 101, 102, 103, 109, 111, and 113)
- Physics
- Psychology (120, 201, 314, 333, 329, and 416 only)
- Sociology (S351 only)
- SPEA (K300 only)
- Statistics

Social and Behavior Sciences

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA (J101 only)
- WOST (W210 only)

3 credits in each Required Area of Learning Credits: 9

Additional credits in one of the Required Areas of Learning Credits: 6

Total Credits: 30

Native American Studies Certificate

Program: Certificate in Native American Studies
College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

The student learning outcomes for the degree are as follows:

- The holder of this certificate will have knowledge of the cultures, prehistory, and creative and artistic expression of Native Americans. He or she will be able to apply this knowledge in pursuit of social work or economic development work on behalf of Native American Organizations.

A certificate in Native American studies is available to all IPFW students. The program provides an appreciation of the cultures, prehistory, history, and creative and artistic expression of Native Americans for the benefit of those who may be interested in social work, economic development, and Native American organizations.

To earn the certificate, you must meet all regular IPFW admission requirements (see Part 8) and complete the following courses with a grade of C or higher in each course:

Program Requirements

Credits in ethnography of Native Americans chosen from the following:
Credits: 6

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Dawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Credits in prehistory of Native Americans chosen from the following:
Credits: 3

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P360 - Archaeology of North America

Introduction to antiquity of the American Indian, principal culture areas, and field methods and techniques incident to recovery of archaeological data and materials.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Credits in history of Native Americans chosen from the following: Credits: 3

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Sawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A318 - The American West

Western expansion and development 1763-1900: economic, political, and social. Special attention to natural resources, Native American-Anglo American relations, and the role of the West in American myth and symbol.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F341 - Latin America: Conquest and Empire

Geographical, Indian, Spanish, Portuguese, and African backgrounds; discovery and conquest; settlement and expansion; political, economic, social, cultural, and religious institutions; trans-European struggle for hemispheric dominance; wars of independence; 1492-1825.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F342 - Latin America: Evolution and Revolution

Hispanic America since independence, with emphasis on common problems of nation building in multi-racial former colonial societies; latifundia; dependency relationships; impact of industrialization; the conservative and revolutionary responses; 1810- present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F432 - 20th Century Latin American Revolutions

Revolutions, revolutionary movements, rapid social change, and modernization from Battle through Menem. Particular attention to the Mexican, Cuban, Bolivian, Guatemalan, Costa Rican, and Nicaraguan revolutions, to the Peron, Vargas, and Velasco Alvarado administrations and Cold War confrontations.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

Credits in Native American studies chosen from the following: Credits: 3

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F352 - Native American Folklore

Comparative examination of various verbal, musical, and dance forms of Native American societies. Consideration of cultural systems of Native Americans within the context of general American culture. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Additional credits from the lists above or in an approved elective Credits: 3

Total Credits: 18

Peace and Conflict Studies Certificate

Program: Certificate in Peace and Conflict Studies
College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6019

The student learning outcomes for the degree are as follows:

- Explain sources of conflict as rooted in inequality and injustice, including issues of race, ethnicity, color, gender, sexual orientation, class, age, disabilities, and/or religious affiliation.
- Explain the dynamics of conflict at various social levels, including interpersonal, group, organization, community, society, and/or global.
- Explain varying perspectives on peace and differing paths to achieve it.
- Synthesize a critique of violent techniques of conflict resolution such as war and oppression.
- Demonstrate commitment to social justice and nonviolent conflict resolution.
- Demonstrate skills in employing nonviolent conflict resolution strategies and promoting social change.

A certificate in peace and conflict studies is available to all IPFW students who wish to understand the dynamics of conflict as well as various paths toward peace, from the interpersonal to the global level. To earn this certificate, you must complete the following 15 credits with a grade of C or higher in each course:

Program Requirements

One of the following: Credits: 3

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

PACS P201 - Introduction to Peace and Conflict Studies - Social/Behavioral Sciences Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a social/behavioral sciences focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

Credits in a social and behavioral sciences courses Credits: 3

Chosen from a list available in the School of Arts and Sciences office.

Credits in a humanities course Credits: 3

Chosen from a list available in the School of Arts and Sciences office.

Credits in another course Credits: 3

Chosen from either the humanities course list or the social and behavioral sciences course list.

One of the following senior-project courses: Credits: 3

PACS P497 - Humanities Readings and Research in Peace and Conflict Studies

Readings and research with a humanities focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

PACS P498 - Social and Behavioral Sciences Readings and Research in Peace and Conflict Studies

Readings and research with a social and behavioral sciences focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

PACS P499 - Social and Behavioral Sciences Internship in Peace and Conflict Studies

Internship in an organization related to peace and conflict studies with social and behavioral sciences focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

Total Credits: 15

Piano Pedagogy Certificate

Program: Certificate in Piano Pedagogy

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center (RC) 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

- **Performance.** Students will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.
- **Music Theory.** Students will demonstrate:
 - knowledge of musical form, structures, concepts, and terms
 - skill and fluency in application through analysis
 - ability to compose within basic musical structures
 - perspective regarding historical styles and structures
 - ability to relate the cognitive to aural perception and to aesthetic response
- **Aural Perception.** Students will demonstrate the ability to:
 - read and sing melodic lines with accurate intonation
 - read and perform complex rhythms accurately
 - recognize and notate melodic, rhythmic, and harmonic patterns and progressions
- **Keyboard.** All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:
 - perform appropriate technical skills such as scales, arpeggios, etc.
 - play chord progression from Roman numerals
 - improvise
 - play “by ear” and from lead sheets
 - harmonize melodic lines
 - perform repertoire at the intermediate level
 - transpose simple pieces and lead sheets
 - sight read at the late elementary level

- play from 4-part open score.
- **Technology.** Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:
 - knowledge of computer hardware
 - ability to use notational software
 - ability to use the Internet as a resource for research.

Program Requirements

If you intend to be a professional piano studio teacher, you may earn the certificate in piano pedagogy by satisfying the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4), completing the following courses, and earning a grade of C or better in each:

- Credits in applied music Credits: 8
- Credits in ensemble course(s) Credits: 2

MUS E193 - Piano Pedagogy I

Observation and assistance in piano classes for young students. Class discussion will involve evaluation of teaching; readings from pedagogical literature and on the business of music; survey of methods, teaching materials, and literature. Both courses involve one hour of observation per week.

Preparation for Course

E193 is P: for E194.

Cr. 2.

Notes

Consent of instructor.

MUS E194 - Piano Pedagogy II

Observation and assistance in piano classes for young students. Class discussion will involve evaluation of teaching; readings from pedagogical literature and on the business of music; survey of methods, teaching materials, and literature. Both courses involve one hour of observation per week.

Preparation for Course

E193 is P: for E194.

Cr. 2.

MUS E293 - Piano Pedagogy III

Class meetings cover assigned readings, teaching techniques, and materials. Editions and business practices. Students assist and teach in class piano labs, and teach three private students in the preparatory program.

Preparation for Course

P: E194.

Cr. 2.

MUS E294 - Piano Pedagogy IV

Class meetings cover assigned readings, teaching techniques, and materials. Editions and business practices. Students assist and teach in class piano labs, and teach three private students in the preparatory program.

Preparation for Course

P: E194.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without chords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

Total Credits: 30

Quality Certificate

Program: Certificate

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of quality, metrology, SPC, SQC, TQM, ISO standards, and DOE.

This certificate program prepares graduates with skills in techniques related to quality, such as design of experiments, metrology, and statistical process control. The program provides focused study in the techniques of maintaining and improving quality of manufacturing processes.

Credits earned in the certificate program may be applied toward the associate and bachelor's programs in industrial engineering technology.

Program Requirements

To earn the certificate, you must fulfill the requirements of IPFW (see Part 7) and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites:

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

IET 304 - Advanced Metrology

Variable and attribute gage capability studies; measurements and calculations of repeatability, reproducibility, bias, stability, and linearity; measurement uncertainty; traceability to NIST standards; inspection of parts using GD&T callouts.

Preparation for Course

P: 204, MET 223.

Cr. 3.

IET 454 - Statistical Process Control

Online process control including design and analysis of process control charts and sampling plans.

Preparation for Course

P: 204, STAT 301.

Cr. 3.

Hours

Class 3,

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Grade of C or better required

One of the following: Credits: 5-6

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Grade of C or better required

or

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Grade of C or better required

Total Credits: 20-21

Risk and Emergency Management Certificate

Program: Certificate in Risk and Emergency Management Division of Public and Environmental Affairs

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The student learning outcomes for the degree are as follows:

- The certificate in Risk and Emergency Management will inform and enhance the knowledge base and skills level of those who are responsible for managing risks and emergencies.

The certificate in risk and emergency management is recommended for students from any major that, during their careers, may directly or indirectly be involved in managing emergencies and disasters. Students need not be enrolled in a degree program to complete this certificate.

To earn the certificate, students must complete at least 11 credit hours as residency credits at IPFW. A grade point average of 2.0 or higher is required in all course work credited toward the certificate.

Program Requirements

CS 292 - Intermediate Topics in Computer Science

Intermediate seminar addressing current topics or issues in computer science or information systems.

Preparation for Course

P: consent of instructor.

Cr. 2-3.

Variable Title

(V.T.)

Approved topic: Technology and Emergency Management (SPEA V465, GIS Mapping, may be taken as substitute)

HSC 499 - Special Topics in Health Sciences

Hours, subject matter, and credit to be arranged by staff. Course may be repeated for credit up to 9 credits.

Preparation for Course

P: As determined by HSC faculty.

Cr. 2-6.

SOC S410 - Advanced Topics in Social Organization

An advanced course in social organizations, allowing for a more thorough coverage of selected topics, e.g. social stratification, formal organizations, urban social organization, education, religion, politics, demographics, social power, social conflict, social change, comparative social systems, race and ethnic relations, rural sociology, urban sociology, and work reorganization. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for use in fulfilling the Cultural Studies (Non-Western Culture) requirement only when the topic is Culture of China.

Approved Topic: The Social Dimension of Disasters (SPEA J370, The Social and Mental Health Dimensions of Disasters, may be taken as a substitute)

SPEA V275 - Introduction to Emergency Management

An examination of the background and nature of the profession, the central theoretical debates concerning natural and human-induced disasters, mitigating and reacting to these catastrophic events, and the major roles and responsibilities of emergency managers. Current practical problems and future directions will be explored.

Cr. 3.

SPEA V387 - Public Administration and Emergency Management

An examination of the American federal system and how it affects policy making and emergency management. Topics include government programs, participation of agencies and actors from all three levels of government, the nonprofit sector, and the private sector. Administrative processes in managing major hazards and disasters will be presented.

Cr. 3.

SPEA V389 - Risk and Hazard Mitigation

An examination of the principles and practice of risk and hazard mitigation at all levels of government and private industry. The tools, techniques, resources, programs, intergovernmental relationships, public-private partnerships, and the broader social context involved in planning for organizational and business continuity and implementing risk reduction strategies are covered.

Cr. 3.

And Select One of the Following:

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

Total Credits: 21

Supervisory Leadership Certificate

Program: Certificate

Division of Organizational Leadership and Supervision

College of Engineering, Technology, and Computer Science

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will demonstrate effective oral and written communication skills.

This certificate program helps you prepare for supervisory leadership positions in any industry. The classes can later be applied toward an associate degree and bachelor's degree with a major in organizational leadership and supervision. Interested individuals must apply for the program before completing 9 hours of applicable course work.

The certificate option is available to community members who enter as non-degree seeking students and to students in good academic standing who are enrolled in non-OLS plans of study. OLS-degree-seeking students are not eligible to enter the certificate program.

To earn the certificate, you must fulfill the requirements of IPFW (see Part 8) and the College of Engineering Technology and Computer Science, Division of Organizational Leadership and Supervision (see Part 4), complete the following courses, and earn a grade of C or better in each course:

Program Requirements

- OLS Elective Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

Total Credits: 21

See the OLS advisor for a list of approved OLS electives.

Teaching English as a New Language Certificate

Program: Certificate in Teaching English as a New Language Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The undergraduate certificate in teaching English as a new language is intended primarily for students who are working towards a baccalaureate degree and wish to be trained in teaching English to non-native speakers. Other potential audiences include people who are preparing to live abroad or who wish to facilitate their employment abroad, and those who have creative, technical, or business expertise and wish to work with ENL students in professional settings. With the quickening expansion of English as the international language of art, commerce, education, science and technology, the need for qualified teachers continues to increase.

The required courses will familiarize students with the major theoretical foundations of teaching English as a new and additional language. Students will become acquainted with ENL pedagogy and resources and will acquire experience by teaching ENL learners, with supervision, in real classrooms. The undergraduate TENL Certificate will be available to any student. It can stand alone as a separate credential or be integrated within the requirements of the B.A. program in English as an option in the English Language Concentration. Some courses may also apply to a degree from the School of Education.

In addition, **licensure endorsement** is available to TENL certificate students who are licensed teachers, candidates who are already licensed in specific content area(s) at specific grade levels, or prospective teachers who are in the process of obtaining such a license. Please see the special requirements below for the licensure endorsement

Certificate Requirements

The TENL certificate will require satisfactory completion of eighteen credit hours of course work in the areas of ENL pedagogy and materials preparation, second language acquisition theories, sociolinguistics and cultural issues, English grammar, and practical classroom experiences. No course with a grade below 2.0 will count toward the TENL certificate. Satisfactory completion of LING L103 or equivalent is a prerequisite for all courses at the 300-level and higher.

Courses Required for the Undergraduate Certificate in TENL

(LING L103 or equivalent is a prerequisite for all TENL courses, 300-level or higher.)

Grammar Credits: 3

ENG G302 - Structure of Modern English (TESOL)

Linguistic analysis of present-day spoken and written English, with attention to its phonemic, morphemic, and syntactical systems and its system of expressive features.

Cr. 3.

Practicum Credits: 3

LING L470 - TENL Practicum

Under supervision, students teach English as a new language. The course provides experience in instruction, assessment, placement, and materials preparation. Classroom lectures, discussions, and assigned readings focus on teaching English as a new language.

Preparation for Course

P: permission of instructor.

Cr. 3.

Sociolinguistics Credits: 3

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

Language Acquisition Credits: 3

ENG G432 - Second Language Acquisition

An introduction to a broad range of issues in the field of second language acquisition, providing the student with an overview of the most important approaches to the fundamental questions of how people learn a second language. Provides students with basic knowledge of theories of second language acquisition, and an understanding of how theoretical perspectives inform practical application.

Cr. 3.

Methods Credits: 6

LING L321 - Methods and Materials for TESOL I

This course provides an overview of teaching English to speakers of other languages with an emphasis on methodology, examining different approaches, techniques, and various instructional options in light of different teaching contexts and learners' needs.

Cr. 3.

LING L322 - Methods and Materials for TESOL II

This course aims at enhancing participants' understanding of theoretical principles underlying the preparation of ESL instructional materials as well as course participants' knowledge and skills in materials preparation and effective implementation. It also addresses issues related to course design, content selection and organizing, and language assessment.

Cr. 3.

Total Credits: 18

Admission Requirements

The existing requirements for admission as an unassigned or non-degree-seeking student apply to those who wish to earn the certificate as a stand-alone credential. Existing requirements for admission, completion, and residency, and eligibility apply to those who wish to earn the certificate as part of a degree program.

As of Fall, 2009, up to and no more than nine credit hours of required courses taken prior to formal admission to the TENL Program will be accepted as applying to completion of certificate requirements.

Licensure Endorsement

The Department of English and Linguistics, in conjunction with the School of Education (SOE), offers an endorsement in Teaching English as a New Language to licensed teachers, candidates who are already licensed in specific content area(s) at specific grade levels, or prospective teachers who are in the process of obtaining such a license.

Licensure Endorsement Requirements

The licensure endorsement will require satisfactory completion of eighteen credit hours of course work in the areas of ENL pedagogy and materials preparation, second language acquisition theories, sociolinguistics and cultural issues, English grammar and practical classroom experiences.

In addition to regular IPFW admission standards as presented in the IPFW Bulletin, students must meet the School of Education's requirements for admission to the teacher education program and meet the following criteria:

- Success passage of PPST
- Minimum GPA of 2.5
- Completion of LING L103

Students must maintain a minimum overall GPA of 2.5 or better (of 4.0) in the program. No course with a grade below 2.0 will count toward the licensure endorsement. Satisfactory completion of LING L103 or equivalent is a prerequisite for all courses at the 300-level and higher.

After completion of all coursework in the TENL Certificate program, those seeking the licensure endorsement must apply to the state of Indiana to have the endorsement applied to their license. Students will be assisted with applications through the Department of English and Linguistics and the School of Education.

Women's Studies Certificate

Program: Certificate

College of Arts and Sciences

Classroom-Medical Building 35F ~ 260-481-6711 ~ www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- demonstrate understanding of major categories of feminist critical analysis, such as gender, race and class
- demonstrate the ability to think critically about major issues in feminism

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

See College of Arts and Sciences in Part 4 for further information.

The Women's Studies Certificate is designed for students majoring in academic programs outside the College of Arts and Sciences who are interested in a concentration of course work in women's studies. This program is also appropriate for community members who wish to augment or update past academic studies in a field that has relevance for today's more diverse workforce and society. The required 21 credits are allocated as follows and must be completed with a grade of C or higher in each course:

Program Requirements

- One cross-listed course from the student's department, division, or school to be counted in the student's major as well as in the certificate, or any other WOST-prefixed or cross-listed course Credits: 3
- WOST-prefixed or cross-listed course in science or social science Credits: 3
- WOST-prefixed or cross-listed course in visual arts or humanities Credits: 3
- WOST-prefixed or cross-listed course Credits: 3

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

WOST W400 - Topics in Women's Studies

An interdisciplinary approach to selected ideas, trends, and problems in women's studies. The capstone course focuses on issues and controversies in the new scholarship on women. Specific topics announced in Schedule of Classes

Preparation for Course

P: junior or senior standing, 12 credits of women's studies course work or permission of instructor.

Cr. 3.

Variable Title

(V.T.)

(the capstone course)

Total Credits: 21

Concentration

Accounting Area Concentration

Program: B.S.B.**Department of Accounting and Finance****Richard T. Doermer School of Business and Management Sciences**

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The accounting concentration provides you with academic preparation for careers in auditing, corporate accounting and management services, governmental and nonprofit organizations, public accounting, and taxation. In addition, it equips you with a management tool for intelligent analysis, prediction, decision making, and control.

Upon successfully completing the B.S.B. and accounting concentration requirements, you may be eligible to sit for various professional certification examinations. Students interested in sitting for these examinations should check with the Department of Accounting and Finance (Neff 350) for further information.

You are encouraged to inquire about accounting internships through the co-op program that may be available to you.

To earn the accounting area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

BUS A311 - Intermediate Accounting I

Theoretical framework and application of generally accepted accounting principles to the preparation of financial statements, with emphasis upon the assets and liabilities of an enterprise.

Preparation for Course

P or C: BUS A317; admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A317 - Computer-Based Accounting Systems

This course presents a framework for students to help them think in innovative ways about providing accounting user support through the use of technology. The focus of the course is on understanding organizations (their activities, processes, and objectives) in order to understand how technology can be used as an enabler of organization activities and objectives. Topics covered include modeling business processes, revenue and expenditure cycles, information systems architecture, systems analysis and design, internal control systems, and EDP controls.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A325 - Cost Accounting

Conceptual and procedural aspects of management and cost accounting. Product costing, cost control over projects and products; decision-making emphasis; profit planning; quantitative modeling; and computer applications.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A331 - Taxation of Business Entities

An introduction to the income taxation of business entities including C corporations, partnerships, S corporations, limited liability companies, and some overlapping material of individual taxation. This course will include the basic topics of tax research, gross income, business deductions, property transactions, and special entity formation rules.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Credits in four of the following Credits: 12

BUS A312 - Intermediate Accounting II

A continuation of the work begun in A311. Theoretical framework and application of generally accepted accounting principles to the preparation of financial statements, with emphasis upon owners' equity and special topics such as earnings per share, pensions, leases, income tax allocation, and cash flow statement.

Preparation for Course

P: BUS A311.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A314 - Financial Statement Analysis

Analysis of financial statements to provide basis from which informed decisions concerning investments, financing opportunities, and appropriate financing instruments can be made.

Preparation for Course

P: BUS A311.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A332 - Taxation of Individuals

Federal individual taxation will be emphasized with an exposure to business taxation. Basic tax concepts will be examined through discussions on filing status, exemptions, gross income, exclusions, deductions, employee expenses, alternative minimum taxes, tax credits, and computations leading to the preparation of individual tax returns. Open to majors and nonmajors.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A422 - Advanced Financial Accounting

Theory and problems of business combinations, foreign currency transactions, and partnerships.

Preparation for Course

P: BUS A312.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A424 - Auditing

Public accounting organization and operation; review of internal control systems, verification of balance sheet and operating accounts; the auditor's opinion.

Preparation for Course

C or P: BUS A312; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A425 - Contemporary Accounting Theory

Analyzes and evaluates the rationale for and implications of underlying financial accounting procedures and concepts. Extensive consideration is given to the effects of alternative accounting principles on the measurement of a firm's earnings and financial position.

Preparation for Course

P: BUS A312; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A437 - Advanced Management Accounting

Strategic cost management practices including activity-based management, activity-based budgeting and activity-based costing, target costing, theory of constraints, quality costs, the cost of capacity, the balanced scorecard, and performance measures for automated factories. Learn enhanced problem-solving skills and tools, increased critical-thinking skills, and improved presentation and speaking skills.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A439 - Advanced Auditing

Development of audit skills in planning, account analysis, workpaper techniques. Issues of legal liability. Case studies involving various audit issues.

Preparation for Course

P: BUS A424.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L303 - Commercial Law II

Emphases on Uniform Commercial Code (sales, negotiable instruments, and secured transactions), business organizations and relationships, bankruptcy, and the law of ownership, custody, and possession. Required for business B.S. majors in the accounting concentration.

Preparation for Course

P: BUS L200; admission to business B.S. or P.B.A. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Note

1. The department offers a certificate program in accounting for individuals who have completed a nonaccounting baccalaureate degree. See Accounting under Program Descriptions in the *Bulletin*.
2. The department offers an optional program to accommodate Indiana's new requirement of 150 hours of education to obtain the CPA certificate. You may contact the department chair for further information.

Business Economics and Public Policy Area Concentration

Program: B.S.B.

Department of Economics

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6794 ~ www.ipfw.edu/bms

The business economics concentration explores the economic environments in which businesses must operate, as well as the interrelationships among micro-and macroeconomic conditions, private-sector decision making, and governmental programs. You have opportunities to study economic problems and their alternative solutions. You may also study aspects of employment, inflation, international trade, and other economics subject areas.

If you wish to become a professional economist, you should prepare for graduate study by taking additional courses in mathematics, statistics, computer science, and/or research methods.

To earn the business economics and public policy area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in an approved 300/400 level economics course Credits: 6
- ECON E406 Senior Seminar in Economics Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Total Credits: 15

English and Communication Media Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, teacher certification, writing, and language

Program Requirements

- Credits in two 300- or 400-level writing courses (ENG W331, W350, W365, W398, W420, W462; JOUR J310) Credits: 6
- Credits in classics, comparative literature, English, film, or folklore Credits: 3
- JOUR J200 - Reporting, Writing and Editing I . Credits: 3

One of the following Credits: 3

- COM 250 - Mass Communication and Society
- JOUR C200 - Mass Communications
- JOUR J110 - Foundations of Journalism and Mass Communication

Note

In addition, you must complete a minor in one of the following outside fields: business studies, communication studies, journalism, international language and culture studies, professional writing, or fine arts. No more than 6 credits applied to the minor will apply to the major.

English Language Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, teacher certification, writing, and communication media.

Program Requirements

One of the following Credits: 3

- LING L103 - Introduction to the Study of Language
- LING L303 - Introduction to Linguistic Analysis

One of the following Credits: 3

- ENG G301 - History of the English Language
- ENG L304 - Old English Language and Literature

One of the following Credits: 3

- COM 521 - Theories of Rhetoric
- ENG W310 - Language and the Study of Writing
- ENG W462 - Studies in Rhetoric and Composition
- LING L360 - Language in Society

Credits In Two Additional Courses in Linguistics Credits: 6

- Including AUS 306, the English language, anthropological linguistics (including ANTH L200 and L400), or psycholinguistics (including AUS 181, 182, 309; PSY 426, 526)

Note

The department recommends the study of a second foreign language with a foreign-language minor.

English Literature Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include teacher certification, writing, language, and communication media.

Program Requirements

- Credits in one additional course in American literature. Credits: 3
- Credits in one additional course in British literature before 1700. Credits: 3
- Credits in one additional course in British literature after 1700. Credits: 3
- Credits in two additional courses in classics, comparative literature, English, film, or folklore. Credits: 6

Note

If you plan to work toward advanced degrees (M.A., Ph.D.) in English, the department recommends additional period or major-author courses and study of a second foreign language. If you are a prelaw student, the department recommends upper level writing courses.

English Teacher Certification Concentration

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, writing, language, and communication media.

The student learning outcomes for the degree are as follows:

- Students demonstrate their acquisition of the fundamental skills necessary for the secondary education classroom; knowledge of American and British literary texts; fundamental rules of oral and written communication; acquisition of pedagogical methodologies necessary for the instruction of literature and language in a secondary education environment.
- Students exhibit the application of their knowledge of literature, language, and communication to the teaching of others.

(21 Credits Plus 32 Professional Education Credits)

To be eligible for teacher certification, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Program Requirements

- Credits in one additional course in language study. Credits: 3
- Credits in one course in ethnic, minority, or non-Western literature. Credits: 3
- Credits in one course in Western literature other than British or American. Credits: 3
- Credits in one course in mass communication, including journalism and film. Credits: 3
- Credits in one additional course, 300 level or higher, in writing, literature, language study, or mass communication. Credits: 3
- ENG L391 - Literature for Young Adults. Credits: 3
- ENG W400 - Issues in Teaching Writing. Credits: 3

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming

strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC M447 - Methods of Teaching High School English

Public school participation required.

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school

participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

Note

A certificate or licensure endorsement to teach English as a New Language is also available.

Finance Area Concentration

Program: B.S.B.

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The finance concentration is composed of courses that have been selected to familiarize you with the theory, instruments, and institutions of finance, and with a financial approach for structuring and analyzing management decisions. The study of finance provides a basis for careers in corporate financial management, as well as executive positions in commercial banking, savings and credit institutions, and the investment field.

To earn the finance area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

BUS F303 - Intermediate Finance

Advanced treatment of corporate financial management. Covers all major areas of corporate financial decisions: capital budgeting, dividends, capital structure, cash-flow projections, mergers, and acquisitions.

Preparation for Course

P: BUS F301.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F310 - Financial Statement Analysis - Finance Perspective

Analysis of financial statements to provide basis from which informed decisions concerning investments, financing opportunities, and appropriate financing instruments can be made.

Preparation for Course

P: BUS F301.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F345 - Money/Banking/Capital Markets

An analysis of the interrelated financial systems of central banks, private banks, and other sources and users of financial capital. Theoretical, empirical, policy, and institutional issues are analyzed using economics and finance. Topics include the theory of money demand and supply, monetary policy and central banks, interest rate determination, financial intermediaries, and international financial markets.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

Credits in four of the following: 12

BUS A325 - Cost Accounting

Conceptual and procedural aspects of management and cost accounting. Product costing, cost control over projects and products; decision-making emphasis; profit planning; quantitative modeling; and computer applications.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F420 - Equity and Fixed Income Investments

Conceptual and analytical framework for formulating investment policies, analyzing securities, and portfolio strategies for the individual and corporate investor.

Preparation for Course

P: BUS F303.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F446 - Management of Commercial Banks and Other Financial Institutions

Management policy and strategy decisions including asset, liability, and capital management within the legal, competitive, and economic environment.

Preparation for Course

P: BUS F301, F345; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F494 - International Finance

An introduction to international capital budgeting and cash management, investing, multinational transfer pricing, exchange rate risk, hedging techniques, international trade practices, and other issues that will provide an overview of global financing practices.

Preparation for Course

P: F303.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Total Credits: 24

Management and Administration Area Concentration

Program: B.S.

Department of Management and Marketing

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6470 ~ www.ipfw.edu/bms

The management and administration concentration provides you with an opportunity to study a broad scope of business and economics subjects, as well as concepts and theories of managing complex business operations. The courses stress goal setting, planning, controlling, and problem solving in the context of major business firms in domestic and international environments.

To earn the management and administration area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in two additional 400-level management courses (Courses that start with D, K, W, P, or Z) The one exception is M426 Sales Management, which will also count as a management elective. Credits: 6
- One semester of a foreign language of your choice. Credits: 3
- ILCS I350 International Communications. Credits 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K327 - Deterministic Models in Operations Research

Philosophy and techniques of operations research and management science as they relate to business decision making. Topics include behavioral model building, optimization techniques, sensitivity analysis, and dynamic analysis.

Preparation for Course

P: BUS P301; MA 229; Junior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z440 - Personnel: Human Resources Management

Nature of human resource development and utilization in the American society and organization; government programs and policies; labor force statistics; personnel planning, needs forecasting; selection, training, and development of human resources; integration of governmental and organizational programs.

Preparation for Course

P: BUS Z302.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Total Credits: 21

Marketing Area Concentration

Program: B.S.

Department of Management and Marketing

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6470 ~ www.ipfw.edu/bms

The marketing area concentration is concerned with the movement of goods and services from the producer to the customer. It encompasses such topics as consumer behavior, product development, pricing, channels of distribution, promotion, marketing research, and effective management of corporate marketing operations.

To earn this area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in two additional 400-level marketing courses Credits: 6
- (BUS courses starting with M4_ _ meet this requirement, along with the K490 ECommerce course and D490 Special Studies in International Business.)
- One semester of a foreign language. Credits 3

- ILCS I350 International Communication. Credits 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M303 - Marketing Research

Topics include defining research objectives, syndicated and secondary data sources of marketing information, exploratory research methods, survey research design, experimental design, and data analysis.

Preparation for Course

P: BUS M301. Focuses on the role of research in marketing decision-making.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M450 - Marketing Strategy and Policy

Provides a capstone to marketing course sequence by drawing on and integrating concepts previously studied. Focuses on management decision problems in marketing-strategy design and the application of analytical tools for optimizing marketing decisions.

Preparation for Course

P: BUS M303; senior class standing. Ideally taken during student's last semester.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ILCS I350 - International Communication

This course examines international communication, global business etiquette, and it teaches cultural sensitivity and awareness based on the study of the interfaces of language, culture, and communication.

Preparation for Course

P: FREN F111, GER G111, or SPAN S111.

Cr. 3.

Total Credits: 21

Writing Concentration

Program: Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include: literature, teacher certification, language and communication media.

Program Requirements

- Credits in three W-prefixed courses in writing (ENG W203 or courses above the 200 level). Credits: 9
- Credits in one course in writing above the 300 level. Credits: 3
- Credits in one additional course in classics, comparative literature, English, film, or folklore. Credits: 3

Note

If you are interested in writing professionally, the department recommends a minor in business studies or journalism.

Dual Degree

Electrical Engineering (B.S.E.E.) and Physics (B.S.) Dual Degree

Programs: B.S.E.E. & Physics (B.S.)

Department of Engineering & Department of Physics

College of Engineering, Technology, and Computer Science & College of Arts and Sciences

*Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu
Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/*

You may choose to complete a dual degree in Electrical Engineering and Physics by completing all of the requirements in both the BSEE and the Physics (B.S.) programs. With overlapping coursework, the dual degree requires 156 hours.

Endorsement

Computer Education Endorsement

Program: Endorsement

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

In addition to the major in secondary education, students may earn a Computer Education Endorsement. This endorsement will be added to a license at the same school setting(s) as other subject areas listed on the license.

Program Requirements

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

EDUC W310 - Computer-Based Teaching Methods

Students will study the methods for teaching programming, application of pedagogical and technical principles of software design, software evaluation, and staff development techniques in computer-based education.

Preparation for Course

P: W210.

Cr. 3.

EDUC W410 - Practicum in Computer- Based Education

The culminating experience for candidates seeking to be licensed in computer instruction. Either eight weeks of full-time fieldwork or 16 weeks of half-time fieldwork in an educational setting that incorporates instructional computing.

Preparation for Course

P: W310.

Cr. 3-8.

Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

EDUC W210 - Introduction to Computer- Based Education

Students achieve facility in BASIC at the intermediate level; are introduced to social, moral, and technical issues relating to educational computing; and examine a variety of educational software.

Preparation for Course

P: W200 or consent of instructor.

Cr. 3.

Total Credits: 26

Middle School/Junior High Endorsement

Program: Endorsement

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

In addition to the major in elementary education or secondary education students may earn a middle school/junior high endorsement in language arts, mathematics, earth and space science, and/or historical perspectives. Each endorsement requires 24 credits of content courses and a 4-credit middle school practicum. If completing more than one endorsement, you only need one practicum for all endorsements.

- **EDUC M470 Practicum: Middle School: Credits: 4**

Language Arts (24 credits)

- British literature elective (300 level or higher) Credits: 3
- American literature elective (300 level or higher) Credits: 3

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

Multicultural Literature Cr. 3.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works

will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Earth and Space Science (24 credits)

- Science electives Credits: 0–2

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

One of the following Credits: 3

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of the following Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Mathematics (24 credits)

- Computer science elective Credits: 3
- Mathematics, computer science, or statistics electives Credits: 2–3

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(or waiver)

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

One of the following Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Historical Perspectives (24 credits)

- American history Credits: 3
- Sociology Credits: 3
- Political science Credits: 3
- Social studies electives Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Honors

Biology Honors Program

You may earn an honors degree in biology by achieving an overall GPA of 3.00 or higher and a biology GPA of 3.50 or higher, conducting a two-semester (6-credit) research project, preparing a senior thesis based on the research project, and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Geology Honors Program

Program: Honors Program

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

Students are encouraged to participate in the departmental honors program. To complete the program, you must maintain a GPA of 3.5 or higher in geology and a cumulative GPA of 3.3 or higher, and must complete at least 1 credit of GEOL G499 Honors Research in Geology leading to a thesis, the results of which must be publicly presented.

History Honors Program

Program: Honors

Department of History

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

A student may earn an honors B.A. degree in history by achieving an overall GPA of 3.5 and a philosophy GPA of 3.5 or higher; conducting a two-semester (6 credit) research project; preparing a senior thesis based on the research project; and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Honors Program Certificate

Program: Certificate All Baccalaureate Degrees

Walb Union G25 ~ 260-481-6924 ~ www.ipfw.edu/honors

The student learning outcomes for the certificate are as follows:

Students are expected to demonstrate the following skills:

- Critical thinking
- Analysis and synthesis
- Problem solving
- Clear oral and written expression
- Ability to conduct research
- Independent thinking

The Honors Program is an undergraduate program that seeks to create learning opportunities and an environment of intellectual excitement and discovery through enriched courses of study and activities within a learning community. Through involvement with the Honors Program, honors students enter into a partnership of learning that extends well beyond the classroom to incorporate an interdisciplinary approach with career-oriented skills. Rich course opportunities and tailored projects create an individual curriculum for each student.

The program is open to students of all majors and undergraduate degrees. Traditional incoming students become eligible for the Honors Program by meeting any one of the following criteria: placing in the top 10 percent of their high school's graduating class, scoring a 650 SAT in any one category, or attaining a 1800 SAT (or 27 ACT) composite score. Any student may participate in the Honors Program after 12 or more credit hours with GPA-related grades at IPFW and a 3.3 GPA or higher. Transfer students eligible for the program must have at least 12 credit hours of GPA-related grades (A, B, C, D, F, IF) with an equivalent of at least a 3.5 GPA on a 4.0 scale from the transferring institution.

To earn the certificate along with the Honors Medal, you must fulfill the requirements of IPFW (see Part 8) and the Honors Program, which are as follows:

- 18 credits of honors coursework through honors courses or H-options
- An honors project (including presentation and paper).
- Honors courses that represent at least two disciplines.
- At least three honors credits at the 300-level or above.
- Both cumulative and honors GPA of 3.5 or higher.
- Fulfill the requirements for a baccalaureate degree at IPFW.

In addition, students are highly encouraged to earn at least three credits of non-project honors coursework through honors courses. Because the Honors Program is an undergraduate program, all of the requirements of the program must be completed while the student is pursuing an undergraduate degree. Upon completion of such a degree, further completion of program requirements will not take effect unless work toward a different undergraduate baccalaureate degree is undertaken.

Philosophy Honors Program

A student may earn an honors B.A. degree in philosophy by achieving an overall GPA of 3.5 and a philosophy GPA of 3.5 or higher; conducting a two-semester (6 credit) research project; preparing a senior thesis based on the research project; and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Psychology Honors Program

A student may earn an honors degree in psychology by completing all of the requirements toward the B.A., achieving an overall GPA of 3.5 or higher, and conducting a two-semester independent research project. In the first semester of independent research the student is to complete three credits of PSY 498 or PSY 590. In the second semester, the student is to complete an honors thesis, PSY 499. As part of the honors thesis, an oral presentation to the department is required.

Minor

Anthropology Minor

Program: Minor

Department of Anthropology College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archaeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

If you are pursuing a major other than anthropology, you may earn a minor in anthropology by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements

Two of the following: Credits: 6

- Additional anthropology credits Credits: 9

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

Total Credits: 15

Applied Ethics Minor**Program: Minor****Department of Philosophy****College of Arts and Sciences**

Classroom Medical 23 ~ 260-481-6366 ~ www.ipfw.edu/phil

A minor in applied ethics; including human rights issues, complements a major in such fields as anthropology, biology, business, communication, English, health sciences, history, psychology, or sociology. The minor also enhances your preparation for graduate study in any of these fields or in law, medicine, natural science, philosophy, religion and theology, or social work.

To earn a minor in applied ethics, you must complete the following credits with a grade of C or better in each course; at least 8 of the credits must be earned as resident credit at IPFW:

Program Requirements

- Credits in an applied ethics course (e.g., PHIL 312, 326, 327, or 328) Credits: 3

- Credits in another PHIL course at the 300 level or above Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

or

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 480 - Practicum in Applied Ethics

Students will be assigned a definite task relevant to their educational interests in applied ethics. Students may be placed in appropriate cooperating local social-service agencies, educational institutions, legal services offices, businesses, or medical facilities. Work will be supervised by the department and the agency. Research and written reports will be required.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Total Credits: 15

Art History Minor

Program: Minor
Department of Visual Arts/Fine Arts Program
College of Visual and Performing Arts

Visual Arts 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa

A student may earn a minor in Art History by completing 18 credit hours of FINA Art History courses with a grade of C or better in each class. The 6 classes must include H111 and H112. Below is a listing of courses offered.

Resident Requirements Completion of at least 9 resident credits at the 200 level or above is required for the minor.

Program Requirements

- Credits in art history selected from the following Credits: 18

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H311 - Art of the Ancient World

A comprehensive study of the art and theory of the Greco-Roman period.

Preparation for Course

P: H111 or permission of the instructor.

Cr. 3.

FINA H312 - Art of the Medieval World

A comprehensive study of the art and art theory of the Medieval period.

Preparation for Course

P: H111 or permission of the instructor.

Cr. 3.

FINA H313 - Art of the Renaissance and Baroque

A comprehensive study of the art and art theory in the Renaissance and Baroque periods.

Preparation for Course

P: H112 or permission of the instructor.

Cr. 3.

FINA H314 - Art of the Modern World

A comprehensive study of the visual arts in the 19th and 20th centuries.

Preparation for Course

P: H112 or permission of the instructor.

Cr. 3.

FINA H411 - 19th Century Art I

1780-1850. Major painters and artistic movements in Western Europe and the United States during the first half of the 19th century.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H412 - 19th Century Art II

Major painters and artistic movements in Western Europe and the United States during the second half of the 19th century.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H413 - 20th-Century Art: 1900-1924

European artists and movements of the first part of the 20th century: Symbolism, Fauvism, Expressionism, Cubism, etc., for painting, and Art Nouveau, de Stijl, Bauhaus, Sullivan, and early Wright for architecture.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H414 - 20th Century Art: 1925-Present

Painting, sculpture, and architecture from 1925 to the present. Emphasis on American developments, including historical background from Armory Show to migration of Surrealism, Abstract Expressionism, Op, Pop, Minimal, and Kinetic art. A world view of architecture will cover such topics as International Style and New Brutalism.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FINA H495 - Readings and Research in Art History

May be repeated for a total of 12 credits at the graduate level.

Preparation for Course

P: consent of instructor.

Cr. 1-4

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

Total Credits: 18

Biology Minor

Program: Minor

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

If you are pursuing a major other than biology, you may earn a minor in biology by completing each of the following courses with a grade of C or better and earning at least 10 credits as resident credit at IPFW:

Program Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Total Credits: 19

Business Studies Minor

Program: Minor

SBMS Undergraduate Student Affairs Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

The minor in business studies provides a fundamental background in the principles of business and economics. The minor is available to any IPFW student majoring in a nonbusiness bachelor's degree program. Your eligibility for this program is governed by the policies of the division/department in which you are enrolled. Please see your academic advisor for additional information.

To earn this minor, you must be regularly admitted to an IPFW bachelor's degree program that permits this option. All courses that compose this option have specific prerequisites. You must meet the prerequisites for each course and earn a grade of C or better in each course marked with an *. Some of these courses may be applicable to other requirements of your degree program. See your academic advisor for details.

Program Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

*

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

*

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

*

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

*

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(or MA 165 or 223)

Two of the following: Credits 6

Upon completion of all above courses and after attaining junior class standing, you may select a maximum of two from the following:

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

Note

As a major in another bachelor's degree program, you are not eligible to enroll in any additional business or economics courses. No more than 25 percent of a nonbusiness student's baccalaureate curriculum may be in subjects available in the Richard T. Doermer School of Business and Management Sciences.

Total Credits: 31

Chemistry Minor

Program: Minor

Department of Chemistry

School of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are pursuing a major other than chemistry, you may earn a minor in chemistry by completing the following courses with a grade of C or better and earning at least 13–15 credits as resident credits at IPFW:

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits in one of the following Credits: 3–4

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 383 - Physical Chemistry

Kinetic theory of gases, gas equations of state, Maxwell-Boltzmann distribution. Classical thermodynamics including the first, second, and third laws, spontaneity, chemical potential, phase equilibria. Introduction to quantum mechanics: postulates of quantum theory, linear operators, Heisenberg indeterminacy principle, Pauli principle, orbital and spin angular momentum. Simple quantum systems such as particle-in-a-box, harmonic oscillator, hydrogen atom. Symmetry. Atomic and molecular spectroscopy.

Preparation for Course

P: CHM 116, MA 261, and PHYS 251.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits in one of the following courses in analytical chemistry Credits: 4

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

One of the following sequences Credits: 8–10

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

or

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses.

Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 265 - Organic Chemistry Laboratory

Laboratory experiments include a large number of techniques for sophisticated organic syntheses. The preparations are designed not only to illustrate the classical reactions discussed in CHM 261, but also to allow for wider application of the principles involved.

Preparation for Course

C: CHM 261.

Cr. 2.

Hours

Lab. 6

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 266 - Organic Chemistry Laboratory

A continuation of CHM 265. A substantial portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify "unknowns" and mixtures and is introduced to some modern instrumental techniques.

Preparation for Course

P: CHM 265; C: CHM 262.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Total Credits: 26-29

Communication Studies Minor

Program: Minor

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

If you are pursuing a major other than interpersonal and organizational communication or media and public communication, you may earn this minor by completing the following requirements with a 2.0 or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

- Credits in communication courses approved for communication B.A. majors Credits: 6
- (We strongly suggest students consult with the Department of Communication advisor to select these courses)

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

Total Credits: 18

Computer Science Minor

Program: Minor

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

If you are pursuing a major other than computer science, you may earn a minor in computer science by completing the following courses. Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites.

Required Courses (14 Credits)

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems,

debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

CS 200+ Electives (6 Credits)

Any CS 200 level, CS 300 level or CS 400 level courses except CS 306.

Total Credits: 20

Creative Writing Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

This program is available to all IPFW students except those pursuing the communication media, teacher-certification, or writing concentration with a major in English.

You may earn the minor by completing the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course.

Program Requirements

- One additional writing course, 300 level or above Credits: 3
- One additional course in classics, comparative literature, English, (except ENG W130, W131, W135, W233), film, folklore, or linguistics; or COM 436 or THTR 376 Credits: 3

ENG W203 - Creative Writing

Focus in either poetry or fiction writing. Exploration in imaginative writing with focus on one specific genre. May be repeated once for credit with a different topic.

Preparation for Course

P: W131 or equivalent.

Cr. 3.

One of the following: Credits: 3

ENG W301 - Writing Fiction

Further exploration in the art of fiction writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W203 (in fiction) or submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

ENG W303 - Writing Poetry

Further exploration in the art of poetry writing. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W203 (in poetry) or submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

One of the following Credits: 3

ENG W401 - Advanced Fiction Writing

Focused work in the art and profession of fiction writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

ENG W403 - Advanced Poetry Writing

Focused work in the art and profession of poetry writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

Total Credits: 15

Criminal Justice Minor

Program: Minor

Division of Public and Environmental Affairs

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The minor in criminal justice offers you the opportunity to become more knowledgeable in the field of criminal justice and its policy implications. It is available to students who are enrolled in baccalaureate programs other than the Bachelor of Science in Public Affairs degree program with a major in Criminal Justice. The minor can enhance the career opportunities for liberal arts and other majors.

Program Requirements

Each minor requires 15 credit hours of specified courses with a 2.00 grade-point average, and none of the courses may be taken by correspondence through the Division of Continuing Studies. SPEA majors may only double-count 6 of the required 15 credit hours in other SPEA major or minor requirements. Students may earn more than one minor from SPEA, but each minor must have at least 9 credit hours that are not satisfying other major or minor requirements.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

C– or better required.

One of the following: Credits: 3

SPEA J201 - Theoretical Foundations of Criminal Justice Policies

This course examines the impact of sociological, biological, and economic theories of crime and the practice of criminal justice. Focus is upon the nature and importance of theory, context of theoretical developments, methods for the critical analysis of theoretical developments, and policy implications of the varying perspectives considered.

Preparation for Course

P: J101.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

An additional 9 credits of Criminal Justice electives (SPEA Jxxx) at the 300-level or above.

Total Credits: 15

Dance Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/thtr

You may earn a theatre dance minor by completing the following courses and earning a grade of C or better in each course.

Program Requirements

DANC 101 - Modern Dance I

Modern dance is an American art form that has been called "modern" because it broke away from the traditions and formal disciplines of classical ballet of the 19th century. It began as a freedom of expression, individuality, and spirit specifically at the time of the women's suffrage movement, Prohibition, WWI, and new movements in the arts. Over time, principles of the movement and technique were established by the pioneers of modern dance. Although these early pioneers had very different styles and back grounds, they were all serious about their art and creating a new form of dance we now call: modern dance.

Within this course, students will read about the early modern dance pioneers and begin learning the foundation of the art form through vigorous warm-ups and center practice. classes will also incorporate movement experiences,

discussion, improvisation, choreographic compositions, and dance viewing to acquaint students with a range of modern dance styles within a cultural and historical context. Musicality, movement dynamics, personal and period style, as well as the scientific and anatomical principles of dance technique will be discussed and emphasized. The student will be asked to investigate and explore their own mental, physical, and emotional nature in relation to dance and their dancing, so as to inform and expand their capabilities as a dancer and artist. Students will be exposed to improvisational movement as well within the course to help develop awareness of their own body's capabilities and expressiveness through self-exploration.

Cr. 2.

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 134 - The Study of Movement in Human Society

Through the cross-cultural lens of dance anthropology, ethnology, aesthetics, and performance, we will study the meaning dance holds for its community of participants as well as how it functions in a particular society.

Cr. 3.

DANC 136 - Teaching Dance: Theories and Methods

Introduce students to theories and practices of teaching dance and creative movement to a variety of populations in diverse settings.

Cr. 3.

DANC 201 - Modern Dance II

A continuation and refinement of the basic modern dance techniques and principles addressed in DANC 101.

Preparation for Course

P: DANC 101 or permission of instructor.

Cr. 2.

DANC 202 - Ballet II

This course will build upon dancer's current technique. Classes are participatory, focusing on the further development to increase turnout, flexibility, and stage presence. Students will be involved in barre, center, and across the floor work, including more complex adagio, allegro, and turn combinations. This course will entail in-class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. May be repeated for up to 6 credits.

Preparation for Course

P: DANC 102 or consent of instructor.

Cr. 2.

Subject Area

Theatre

DANC 203 - Jazz Dance II

Jazz Dance II is a continuation of Jazz I. further training of the dancer's body with more detailed warm-ups and combinations is the emphasis of the class. Preparing the dancer for performance level is stressed. May be repeated for up to six hours of credit. Credit may be granted by audition.

Preparation for Course

P: DANC 103 or THTR 117.

Cr. 2.

Subject Area

Theatre

DANC 221 - Tap Dance II

The emphasis in this course will be on building upon the basic steps and progressions achieved in beginning tap (DANC 121). Class will include barre work, across the floor and center combinations. As in Tap I, graded technique will be incorporated to monitor progress. This class may be repeated up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 240 - Fundamentals of Dance Composition

An introduction to the theory and practice of the principles and utilization of choreographic skills.

Cr. 3.

One of following Credits: 3

DANC 251 - Dance History

This course is designed to expose students to dance as a fundamental form of human expression. Varied forms of dance will be analyzed and discussed within a sociological, cultural, and historical framework. The focus of this course is the development of Western theatrical dance from the birth of ballet in the Renaissance courts through the eclectic marriage of dance forms found in 20th century America. Throughout this course, students should develop an understanding of dance as an art form.

Cr. 3.

Subject Area

Theatre

THTR 355 - American Musical Theatre

A study of the origin, artistry, history, and unique qualities of the American musical theatre.

Cr. 3.

Total Credits: 24

Economics Minor**Program: Minor****College of Arts and Sciences**

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

If you are pursuing a major other than economics, you may earn a minor in economics by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements

- Credits in two additional ECON courses at the 300–400 level: 6

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Note

Programs can be designed to provide concentrations in several areas. A theory and quantitative concentration of 18 credits, including at least 9 resident credits, can be provided along with suitable study in mathematics to prepare students for graduate programs in economics and related disciplines.

Total Credits: 15

Electronics Minor

Program: Minor

Department of Computer and Electrical Engineering Technology and Information Systems

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The minor in electronics provides a fundamental technical background in analog and digital electronics to enable you to understand, analyze, and troubleshoot basic circuits. It also enables you to specialize and gain an in-depth knowledge of a particular area of electronics.

The ECET department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn a minor in electronics, you must complete the following courses and, unless you have already completed them, the 6 credits of mathematics prerequisites:

Fundamental Courses (12 credits)

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Advanced Courses (8 credits in one of the three options)

Controls

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Microprocessors

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Communications

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area

networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Total Credits: 20

English Minor

Program: Minor

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

This program is available to all IPFW students who are not pursuing a major in English. You may earn a minor in English by completing the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Credits in American literature Credits: 3
- Credits in British literature before 1700 Credits: 3
- Credits in British literature after 1700 Credits: 3
- Additional credits in ENG and LING courses, W100–W299 excepted Credits: 6

Total Credits: 15

Film and Media Studies Minor

Program: Minor

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

The minor in film and media studies provides a coherent introduction to the basics of film/media literacy. The program is designed to develop a critical understanding of the historical, theoretical, aesthetic, cultural and institutional contexts of film, television, and other electronic and digital mass media.

Film/media aesthetics Credits: 3

One of following:

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

Film/media history Credits: 3

One of following:

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

FILM K201 - Survey of Film History

An overview of film history from its beginnings to the present, emphasizing major developments in narrative cinema.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Hours

Class 2-3, Lab. 0-1.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

Upper-level requirements Credits: 6

Two of the following:

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

FILM K302 - Genre Study in Film

Topic varies: the evaluation of typical genres; problems of generic description or definition; themes, conventions, and iconography peculiar to given genres, etc. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Variable Title

(V.T.)

FILM K390 - The Film and Society

Film and politics; censorship; social influences of the cinema; rise of the film industry. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

R: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-4.

Variable Title

(V.T.)

Free elective Credits: 3

One of following:

COM 422 - Women, Men, and Media

An examination of the processes by which gender is constructed in the mass communication media. Students will be asked to consider how the technical, economic, and political constraints and capabilities of the media construct images of gender for audiences.

Preparation for Course

P: 250 or permission of instructor.

Cr. 3.

COM 436 - Script Writing

Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.
(with appropriate topic)

FREN F460 - French Fiction in Film

Involves reading the works of French fiction and studying them as works of literature, followed by the viewing of a film version of each work and the preparation of a comparative analysis of the two versions.

Preparation for Course

P: FREN F305 and F306.

Cr. 3

Dual Level Course

Eligible for graduate credit.

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

(with appropriate topic)

Note

Additional courses may be approved and will be announced in the program brochure and in the Schedule of Classes each semester. At least 8 credits must be completed as resident credit at IPFW.

Total Credits: 15

Fine Arts Minor

Program: Minor

Department of Visual Arts/Fine Arts Program

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

A Fine Arts Minor is designed for IPFW students outside of Department of Fine Arts programs. IPFW students can earn a minor in art by completing 15 credit hours within the Department of Fine Arts while maintaining a 2.0 GPA within the classes.

Resident Requirements Completion of at least six resident credits at the 200 level or above is required for the minor.

Required Courses Credits: 6

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

Additional Fine Arts Credits: 9

Select three additional classes within the fine arts program.

- At least two classes must be at the 200 level or above.
- Two FINA art history classes can be used as part of the additional classes

Total Credits: 15

Folklore Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The minor in folklore familiarizes you with the international body of folklore as well as the theories, techniques, and history of folkloristics. The folklore minor is particularly appropriate for degree programs in anthropology, education, English, history, sociology, and other humanities and social sciences.

This program is available to all IPFW students except those pursuing the teacher-certification concentration with a major in English.

To earn a minor in folklore, you must complete the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Credits in additional courses, including at least two courses above the 200 level in folklore or in folklore-related courses in anthropology, classics, or other disciplines approved by the department Credits: 9

One of following Credits: 3

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F220 - Introduction to American Folklore

The folk cultures of the United States. The art and traditional philosophies of Indians, European-Americans, Afro-Americans, and occupational groups. The adaptation and interrelation of distinct American cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

One of following Credits: 3

ANTH E462 - Anthropological Folklore

Function, forms, and interpretations of folklore in traditional societies. Folklore as an expression of continuity and change.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

FOLK F251 - Folklore Methods and Theories

Basic theoretical approaches to the study of folklore. Relation of folklore to other academic disciplines. History of folklore scholarship. Classification of folklore genres and their function in society. Methods of collecting, analyzing, and indexing traditional materials.

Preparation for Course

P: FOLK F101 or F220.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Total Credits: 15

French Minor

Program: Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

If you are pursuing a major other than French, you may earn a minor in French by completing the following 14 credits, with a grade of C or better in each course.

Study Abroad Both majors and nonmajors are encouraged to study abroad. For those who wish to study French, Indiana University administers and cosponsors an academic-year program in Aix-en-Provence; semester programs in Paris, Rennes, and Rouen; and summer programs in Paris and Quebec.

Program Requirements

- Credits in 300-level French language courses Credits: 6
- Credits in 300-level French literature courses Credits: 6

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

Total Credits: 14

French Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

If you are already licensed or qualified to be licensed in another area, you may earn a French teaching minor by completing the following 34 credits with a grade of C or better in each course.

Program Requirements

- Credits in 300-level French language courses Credits: 3
- Credits in 300-level French literature courses Credits: 3
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

3 Credits

Total Credits: 34

Geology Minor

Program: Minor

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

If you are pursuing a major other than geology, you may earn a minor in geology by completing the following courses with a grade of C or better, with at least 11 resident credits taken at IPFW.

Program Requirements

Two courses from GEOL/GEOG, 200 level or higher Credits: 6

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3-4

- GEOL G100/L100 General Geology with Lab Cr. 4.
- GEOL G103 - Earth Science: Materials and Processes Cr. 3.

One of following Credits: 3

- GEOG G237 - Cartography and Geographic Information Cr. 3.
- GEOL G323 - Structural Geology Cr. 3.

One of following Credits: 3

- GEOL G300 - Environmental and Urban Geology Cr. 3.
- GEOL G334 - Principles of Sedimentology and Stratigraphy Cr. 3.

Total Credits: 21-22

German Minor

Program: Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are pursuing a major other than German, you may earn a German minor by completing the following 15 credits, with a grade of C or better in each course:

Study Abroad both majors and nonmajors are encouraged to study abroad. For those who wish to study German, Indiana University administers and cosponsors an academic-year program in Freiburg, a semester program in Freiburg, and a summer program in Graz (Austria).

Program Requirements

- Additional German credits at the 300–400 level Credits: 9

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Total Credits: 15

German Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are already licensed or qualified to be licensed in another area, you may earn a German teaching minor by completing the following 32 credits with a grade of C or better in each course.

Program Requirements

- Additional German credits at the 300-400 level Credits: 9

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Total Credits: 32

History Minor

Program: Minor

Department of History

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

If you are pursuing a major other than history, you may earn a minor in history by completing the following credits with a grade of C or better in each course, including at least 9 credits as resident credit at IPFW:

Program Requirements

- Credits in 100-level courses (H105, H106, H113, H114, or equivalent honors courses) Credits: 9
- Credits above the 100 level, including courses in at least two of the following three areas: United States, Western Europe, and Other World areas Credits: 9

Total Credits: 18

Note

Included in the above credits must be at least one course dealing primarily with the period before 1800 (HIST A301, A302, A310, B351, B352, C388, C390, C393, E331, F341, H113, H201, H222, and occasional special offerings). HIST H232 may not be used to fulfill the Western European or Other World area requirements, but may be used for additional credits toward the major or minor.

Human Services Minor

Program: Minor

Department of Human Services

College of Health and Human Services

Neff Hall 130 ~ 260-481-6424 ~ www.ipfw.edu/hs/

The minor in human services is available to students enrolled in baccalaureate programs other than the Bachelor of Science in human services. The minor can enhance the career opportunities for liberal arts, general studies, and other majors. The minor requires 15 credit hours of specified courses, which must be completed with a grade of C or better. Students should contact the Department of Human Services at 260-481-6424 for more information and to be assigned to an academic advisor.

Program Requirements

HSRV 100 - Introduction to Human Services

An orientation to human services. History, current concepts, ethics, and roles of the various workers in the field are discussed. This course is open to non-HSRV majors.

Cr. 3.

HSRV 315 - Introduction to Theories and Therapies

Discusses specific theories and therapies that are essential for human service professional practice. This course also provides knowledge that is required to pass the Indiana certification examination for addiction counselors.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 320 - Case Methods

This course will provide theoretical knowledge of techniques in case management related to human service clients and agencies. Case management with a wide range of populations will be discussed.

Preparation for Course

P: 100, 105.

Cr. 3.

One of the following: Credits: 3

HSRV 325 - Current Trends in Psychosocial Rehabilitation

Current models of psychiatric rehabilitation emphasize community integration and support for persons with serious mental illnesses and developmental disorders. This course examines historical attitudes toward those classified with these disorders; current theoretical perspectives; physiological evidence of a disease process; and research into the various intervention models for psychopharmacological, social-environmental, and individual treatment. One semester of Abnormal Psychology is strongly recommended, but not required, prior to taking this course.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 350 - Drugs and Society

Emphasizes the social, psychological, biological, and cultural contexts in which addiction develops and occurs. Encourages an understanding of substance use, abuse, and addictive behaviors within a larger pattern. For this reason, the course is applicable to anyone who will be in a position in which they must a) work with people on a daily basis, b) provide supervision or support services within an organization, or c) work in any aspect of the helping professions.

Cr. 3.

HSRV 399 - Special Topics

Hours, credits, and subject matter to be arranged by department. See department for current course selection.

Cr. 1-3.

Variable Title

(V.T.)

HSRV 420 - Substance Abuse Prevention

Provides an overview of substance abuse theory, practice, and prevention. Includes concepts related to substance abuse prevention in the educational setting.

Cr. 3.

One of the following: Credits: 3

HSRV 103 - Helping Relationship Techniques

This course will provide students with opportunities to increase their effectiveness in helping people. This course will examine the helping process in terms of skills, helping relationship. This course is appropriate for anyone who is entering a career dealing with people. This course is open to non-HSRV majors.

Cr. 3.

HSRV 105 - Basic Interviewing Skills

This course is designed to introduce and develop skills associated with interviewing clients. The focus will be on skill-building and competencies in attending behaviors, client observation skills, open and closed questions, encourager skills, paraphrasing and summarizing, and reflection of feelings and meaning. Advanced interviewing skills will include confrontation, probes, focusing, and information giving. This course is open to non-HSRV majors.

Cr. 3.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

Informatics Minor

Program: Minor

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The minor in Informatics complements a major in such fields as Nursing, Biology, Business, management, government/Public Administration and Education. To earn a minor in Informatics, you should have completed ETCS 106 (or equivalent) with a grade of C or better and the following must be completed:

Program Requirements

Informatics Core Courses

IM 105 - Introduction to Informatics

This is a required foundation course for all students interested in the study of informatics leading to the fulfillment of requirements in the minor or certificate programs. The course will cover key topics relating to ethics and social issues regarding informatics. The course will provide applications and discipline-specific examples involving all of the current converging technologies utilized in informatics. The material presented will explore the interdisciplinary nature of informatics. This course will provide the program plan of study and describe various courses so the student can make the decisions necessary for elective options as well as the semesters in which courses will be taken.

Preparation for Course

P: CS 106 or equivalent.

Cr. 1.

IM 210 - Problem Solving and Programming for Informatics

An introduction to computer programming and problem solving at the level needed for the study of informatics. Programming topics include data representation, expressions, control statements, subprograms, simple input/output, GUI development basics, and event-driven programming. Problem-solving techniques include problem specification, pseudo-code, and stepwise refinement.

Preparation for Course

P: MA 153, CS 106,3 or equivalent and IM 105.

Cr. 4.

IM 220 - Database Applications for Informatics

Theory and application of database systems from the viewpoint of informatics. Topics include data analysis and design, data storage, data querying, and data visualization. A special emphasis will be on developing Web applications that allow for information gathering and graphical representation of information through the deployment of database technology.

Preparation for Course

P: IM 210.

Cr. 3.

IM 230 - Informatics Infrastructure

This course focuses on the fundamental informatics technologies and their use in the company, business, or organization. Topics include design and development of Web and other applications, computer operating systems, distributed systems, data applications, data information analysis, e-commerce, multimedia technology, social implication of informatics, current and emerging technologies.

Preparation for Course

P: IM 210.

Cr. 3.

IM 330 - Information Retrieval and Presentation

An introduction to the basic concepts and techniques in information retrieval and visualization. Topics include information organization, access, and visualization, Web-based information retrieval, searching, and graphical presentations and interfaces. Students will study existing information retrieval and visualization systems.

Preparation for Course

P: IM 210.

Cr. 3.

Informatics Elective selected from the following (one course, Cr. 3):

IM 310 - Problem Solving and Programming for Informatics

A continuation of IM 210 for students interested in a deeper understanding of program development. New topics include arrays, file I/O, fundamentals of object-oriented programming, and development of user-defined classes, advanced GUI programming, graphics, and presentation of visual data. Reinforcement of problem-solving techniques.

Preparation for Course

P: IM 210.

Cr. 1.

IM 370 - Network Design and Management for Informatics

The design, implementation, and management of computer networks for informatics. Topics include telecommunication concepts, client-server environments, Internet and intranet, wireless systems, network devices, network operating systems, network design, implementation and management, and network security. Students are expected to design and implement small networks.

Preparation for Course

P: IM 230.

Cr. 3.

IM 380 - HCI Design for Informatics

A survey of human-computer interaction concepts, methods, and evaluation. Topics include HCI design issues, Web design, user interface design and techniques, multimedia, and simulated environments. Students are expected to design, implement, and evaluate user interface designs in small projects.

Preparation for Course

P: IM 330.

Cr. 3.

(Other approved Informatics courses from a related discipline)

Informatics Capstone Course, Cr. 3

IM 450 - Informatics Design Project

This course will incorporate a discipline-oriented project. The student will be involved in a project from the planning through the end product. Parts of the project will include the data design, gathering, manipulating, and analysis. The project will also consider Web interface and network considerations. Final graphics and visualization presentations (including multimedia if needed) will be the end product. Students will work in teams.

Preparation for Course

P: IM 310 or 370 or 380.

Cr. 3.

(Other approved Informatics capstone course from a related discipline)

Information Systems Minor

Program: Minor

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering, Technology, and Computer Science

The Minor in Information systems provides a fundamental background for students interested in developing software for business/organization systems and applications. The minor involves two programming languages most used in businesses/organizations and a beginning understanding of networking as well as strong coverage systems analysis techniques.

To earn a minor in information systems, you must complete the following courses:

Major Requirements

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

CS 366 - Structured Analysis Techniques

Methods used in analyzing information systems. Topics include user interviewing and observation, event analysis, data flow diagrams, data dictionaries, minispecifications, decision trees, decision tables, and both logical and physical models. Students practice these techniques in a major structured analysis project resulting in a requirements specification document.

Preparation for Course

P: ENG W234 and CS 260.

Cr. 3.

One of the following Credits: 3

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 203 - Advanced Visual Basic

This course continues the study of Visual Basic begun in CS 114/ ECET 114. Topics to be covered include reading and writing of sequential and direct files; custom controls; advanced SQL; the creation of online help; object linking and embedding (OLE); calling DLL procedures (Windows API); class modules; and an introduction to ActiveX components. Student will learn the skills needed to create stand-alone and www-based Visual Basic applications for personal computer use. This course will provide guidance in preparing for the Microsoft Certified Systems Designer examination.

Preparation for Course

P: CS 114 or ECET 114.

Cr. 3.

Total Credits: 20

Journalism Minor

Program: Minor

College of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

The IPFW Journalism Program offers two minors. A journalism minor provides underpinning for those interested in various media; the public relations minor described later in this section is more particularly defined and will appeal to those wishing to concentrate in corporate communications or advertising/public relations.

These minors are especially appropriate for media and public communication or English communication media majors. Those with a desire to write or report in some content area should consider a major in the area itself. Reporters need a content area such as political science or history; basic science students will discover that science writing is an especially valuable and challenging career goal.

Program Requirements

To earn the journalism minor, you must complete each course with a grade of C or better and must complete at least 8 credits as resident credit at IPFW.

One of following Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Two of the following Credits: 6

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J201 - Reporting, Writing, and Editing II

Working seminar focused on the strengthening of basic journalism skills, including in-depth reporting, editing, and multimedia presentations. Creativity, cooperation, and critical thinking are used to shape effective messages for diverse audiences.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J315 - Feature Writing

The course aims to develop skill in gathering and presenting feature story material, exploring the realm between straight news and editorials. It follows feature-story practice in combining information with entertainment stressing the imperative of research, accuracy, and mechanical correctness.

Preparation for Course

P: JOUR J200.

Cr. 3.

Two of the following Credits: 6

COM 334 - Journalism for the Electronic Mass Media

The development and practice of electronic journalism, with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J390 - Corporate Publications

This course focuses on the practical and specialized concerns of editing and designing newsletters, tabloids, magazines, and newspapers for business, industry, institutions, or other organizations. Attention is given to audience surveys, readability, copy editing, headlines, photographs, cutlines, copyfitting, and printing instruction, with special emphasis on design techniques for the four major types of organizational publications. Includes practice in all facets of publication design. Recommended for persons interested in print communications programs or in developing limited circulation publications. Limited enrollment; consent of instructor required.

Cr. 1-3.

Variable Title

(V.T.)

One of following Credits: 3

COM 432 - Practicum in Television

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional television media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 332, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

JOUR J492 - Media Internship

Must have permission to enroll. Supervised professional experience in communications media. Does not contribute to 27 credit hours of required course work in journalism major but will count toward 33 credit hours maximum allowed in journalism and telecommunications. May be repeated, but student may take no more than 3 hours of internship credit for the B.A. either through the Journalism Program or any other academic unit.

Cr. 1-3.

Total Credits: 18

Labor Studies Minor**Division of Labor Studies****Program Offered: Minor**

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

If you are pursuing a major other than labor studies, you may earn a minor in labor studies by completing 15 credits, including 6 credits from the Labor Studies Core and 9 additional credits in labor studies. The additional 9 credits may come from other core courses, more-advanced courses, topics courses, internships, and directed labor studies.

Linguistics Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

Linguistics is the study of the characteristics of language. Accordingly, linguistics courses are valuable preparation for the study of such subjects as anthropology, communication, education, English, international languages, psychology, sociology, and speech and audiology.

This program is available to all IPFW students except those pursuing the language, teacher-certification, or communication media concentration with a major in English.

To earn a minor in linguistics, you must complete the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Any LING course numbered 300 or above except LING L303 Credits: 3

One of the following Credits: 3

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH L400 - Seminar in the Ethnography of Communication

Current issues in linguistic anthropology, designed to acquaint the student with readings and points of view not covered in the introductory courses. Topics such as (1) languages of the world, (2) variation in language, (3) problems in linguistic structure, and (4) culture and communication.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated once for credit with a different topic.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

One of the following Credits: 3

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L303 - Introduction to Linguistic Analysis

Introduction to basic concepts of linguistic analysis, exemplifying the general principles of structural approaches to the study of language. Application of analytical methods to problems in phonology, syntax, and semantics.

Preparation for Course

P: L103.

Cr. 3.

One of the following Credits: 3

Or, one course in the structure or linguistics of an international language.

AUS 181 - First Course in American Sign Language

Basic manual communication skill including the American manual alphabet, approximately 550 basic signs, and the history and place of manual communication in society. Designed to give the students minimum vocabulary and skills in communicating with individuals who are dependent on this form of communication.

Cr. 3.

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L490 - Linguistic Structures

The linguistic analysis of particular aspects of the structure of one language or a group of closely related languages. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: consent of instructor.

Cr. 3.

Variable Title

(V.T.)

One of the following Credits: 3

Or one course above the 200 level in linguistics or a related discipline approved by the department.

AUS 306 - Introduction to Phonetics

An introduction to articulatory phonetics, speech sounds in languages of the world, and principles and symbols of the International Phonetic Alphabet. Extensive practice in phonetic transcription.

Cr. 3.

Hours

Class 3.

AUS 309 - Language Development

Specific nature, sequence, and pattern of oral language development from birth through adolescence. Nature of language acquisition and approaches to the study of children's language are presented. Linguistic and psychological explanations of the sequence of development are discussed.

Cr. 3.

PHIL 450 - Symbolic Logic

Topics considered include advanced techniques of the logic of quantification, identity, and definite description, intuitive set theory, Russell's paradox, and modal logic.

Preparation for Course

P: 150 or consent of instructor.

Cr. 3.

PSY 426 - Language Development

Linguistic descriptions, successive stages, and psychological explanations of typical patterns of oral language development.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 526 - Psycholinguistics

An introduction to the descriptive devices, central issues, and varying methodologies of psycholinguistics.

Preparation for Course

P: PSY 235 or PSY 350.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 15

Math and Physics Minor - Computer Engineering

Program: B.S.Cmp.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Computer engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Computer engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the computer engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math and Physics Minor - Electrical Engineering

Program: B.S.E.E.**Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Electrical engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Electrical engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the electrical engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math and Physics Minor - Mechanical Engineering**Program: B.S.M.E.****Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Mechanical engineering students that take ME 373 Numerical Methods in Engineering, have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Mechanical engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the mechanical engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math Minor - Civil Engineering**Program: B.S.C.E.****Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Civil engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Mathematics Minor

Program Offered: Minor
Department of Mathematical Sciences
College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

You may earn a minor in mathematics by completing at least six courses in mathematics and statistics. Your selection of courses should be appropriate for your major, and your program for a minor must be approved by the department's program review committee. Two calculus courses must be included. College algebra or trigonometry courses are excluded; one computer science course may be substituted for a mathematics or statistics course. You must have a grade of C or better in all courses included in your minor, and at least half of the credits must be earned as resident credit at IPFW.

Sample Programs for a Minor in Mathematics

Business and Management Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite or Discrete Math:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science Majors

Numerical Analysis:

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Discrete Mathematics:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Linear Algebra:

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Statistics:

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

or

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Liberal Arts Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite Mathematics:

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Life Sciences Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite Mathematics:

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Physical Sciences and Engineering Majors

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Differential Equations:

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Advanced Calculus:

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the

physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Complex Analysis or Linear Algebra:

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

or

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

or

MA 525 - Introduction to Complex Analysis

Complex numbers and complex-valued functions of one variable; differentiation and contour integration; Cauchy's theorem; Taylor and Laurent series; residues; conformal mapping; applications.

Preparation for Course

P: MA 263, 441 or 510.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Technology Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

and

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

Discrete or Finite Math:**MA 175 - Introductory Discrete Mathematics**

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Mathematics Elective:

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

or

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Statistics:

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Media Production Minor

Program: Minor

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

This program is available to all IPFW students, including students with communication majors. To earn a minor in media production, you must complete at least 18 credits with a grade of C or better. You must also complete any prerequisites for the courses that are chosen and complete at least 9 credits as resident credit at IPFW.

Program Requirements

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

Credits from among the following: Credits: 15

COM 331 - Audio Production

Basic principles of audio production as applied to radio and television. Treats program types, production methods, techniques of the sound studio, and laboratory practice in production and direction.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1-2, Lab. 4.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 333 - Film Production

Basic theory and techniques of motion-picture production. Viewing and evaluation of films illustrating a variety of film techniques. Production experiences in filming, scripting, editing, sound recording, and production planning.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

COM 334 - Journalism for the Electronic Mass Media

The development and practice of electronic journalism, with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

COM 337 - Advanced Digital Video Production

Provides experience in writing program proposals and scripts, taping with small-format television equipment, and audio and video editing for various program formats. Special attention to editing, theory and technique, aesthetic considerations, and institutional and community cable outlets.

Preparation for Course

P: COM 248 or 251, and COM 332.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

COM 431 - Practicum in Radio

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional radio media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 331, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

(2 credits, may be repeated once)

COM 432 - Practicum in Television

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional television media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 332, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

(2 credits, may be repeated once)

COM 436 - Script Writing

Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

COM 537 - Educational/Instructional Television

Survey of the educational and instructional applications of multimedia technology; analysis of selected problems in the educational uses of the multimedia, development, application, and analysis of multimedia projects as related to the learning process.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

THTR 158 - Stagecraft

Theory and application of current and traditional technical theatre practices. Training in stage carpentry, painting, and preproduction organization.

Cr. 3.

Hours

Class 3, Lab. 2.

VCD N274 - Digital Imaging

A course designed for non-art majors. Students will learn to apply basic art and design fundamentals to the personal computer. Areas such as page layout and illustration will be covered in assigned problems.

Cr. 3.

Hours

Class 3, Studio 3,

VCD P151 - Design Fundamentals I

In design fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P152 - Design Fundamentals II

In design fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Total Credits: 18

Music Minor

Program: Minor

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center (RC) 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

A minor in music is designed for students who wish to enhance an interest in music while majoring in another area. To earn this minor, you must complete the courses listed below and earn a grade of C or better in each. Six credits must be at the 200 level or higher.

Program Requirements

24 credit hours selected from the following:

Music Theory Credits: 8

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

Music History and Literature Credits: 4**MUS M201 - Music Literature I**

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

Applied Study and/or Ensemble Credits: 6-12

Placement in ensembles and/or applied studios by audition only.

- Applied Study (with jury examination) Credits: 4-8
- Ensembles Credits: 2-4

Electives Credits: 0-6

Students may work with an advisor in the Department of Music to select electives to fulfill the remaining credit hours.

Concert Attendance Credits: 0

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(2-4 Semesters)

Organizational Leadership and Supervision Minor

Program: Minor

Division of Organizational Leadership and Supervision

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

If you are pursuing a major other than organizational leadership and supervision, you may earn a minor in organizational leadership and supervision by completing the following courses with a grade of C or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

Additional Credits in OLS: 3

Total Credits: 18

See the OLS advisor for a list of approved OLS electives.

Philosophy Minor

Program: Minor

Department of Philosophy

College of Arts and Sciences

Classroom Medical 23 ~ 260-481-6366 ~ www.ipfw.edu/phil

If you are pursuing a major other than philosophy, you may earn a minor in philosophy by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW. Substitutions for these courses may be made with the approval of the department.

Program Requirements

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

One of the following: Credits: 3

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of

explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

One of the following: Credits: 3

PHIL 301 - History of Ancient Philosophy

A survey of Greek philosophy from its beginning in the Milesian school through the Presocratics to Plato and Aristotle.

Preparation for Course

P: PHIL 110

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 302 - History of Medieval Philosophy

A survey of the main trends and figures of medieval philosophy, with an emphasis on metaphysics, epistemology, and ethics. Readings (in English translation) may include Augustine, Boethius, Avicenna, Anselm, Abelard, Maimonides, Aquinas, Scotus, Ockham, and Suarez.

Preparation for Course

P: PHIL 110

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

Credits in a philosophy elective at the 400 level or above Credits: 3

(PHIL 493 and PHIL 590 count toward the minor only with the approval of the department.)

Total Credits: 15

Physics Minor

Program: Minor

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

If you are pursuing a major other than physics, you may earn a minor in physics by completing the following credits with a grade of C or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Credits in two of the following: Credits: 6-8

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 16-18

Political Science Minor

Program: Minor

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

Program Requirements

If you are pursuing a major other than political science, you may earn a minor in political science by completing a minimum of 18 credits, including at least 9 resident credits, in the discipline with a grade of C or better in each course. A maximum of 6 credits may be earned in 100-level courses, and a minimum of 6 credits in courses at or above the 300 level (not including Y398 or Y482). Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 of the 18 credits; these two courses together may not count for more than 9 of the 18 credits.

Professional Writing Minor

Program: Minor
Department of English and Linguistics
College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841

This program is available to all IPFW students except those pursuing the language, teacher-certification, or writing concentration with a major in English.

Program Requirements

You may earn a minor in professional writing by completing the following 15 credits, including at least 8 credits completed as resident credit at IPFW, with a grade of C or better in each course.

Preparatory course work in writing (minimum of 3 credits)

One of the following: Credits: 3

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Advanced course work in professional writing

(minimum of 9 credits)

ENG W365 - Theories and Practices of Editing

Students will examine textual and literary approaches to editing given particular rhetorical contexts. Emphasis will be placed on how to make editorial judgments that promote editorial standards without violating authorial intent.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W367 - Writing for Multiple Media

Introduces principles and practices of multimedia design and implementation, with emphasis on writing in multimedia contexts. Students will consider ways that new media affect the production and reception of writing and its relationship to other forms of communication (e.g., oral and visual).

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

ENG W420 - Argumentative Writing

Examines techniques for analyzing and constructing arguments, especially the use of proofs, evidence, and logic. Considers such issues of argument as the ethics of persuasion and the use of style. Students write researched arguments on political, legal, scientific, and academic issues.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

ENG W425 - Research Methods for Professional Writers

Preparation for Course

Examines quantitative, qualitative, and action research techniques as practiced by professionals working in various fields of writing: technical and business writing, freelance and creative writing, academic writing, community and grant writing, journalism, and the teaching of writing. It includes coverage of both primary (i.e., field) and secondary (i.e., library) research.

Cr. 3.

ENG W462 - Studies in Rhetoric and Composition

An examination of major rhetorical theories and their applications for writers and for teachers of composition. Focuses on theories of discourse, invention, form, style, and audience. Aims at developing greater understanding of the writing process. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W233 or equivalent and junior or senior standing.

Cr. 3.

Variable Title

(V.T.)

(Only topics specifically related to professional writing)

Elective (minimum of 3 credits) Credits: 3

Any course from the above two areas not used to fulfill the area distribution requirements. Any other course at the 200 level and above which supports your professional interest in writing. Examples include but are not limited to the following courses:

- **VCD 254** Principles of Graphic Design

This course must be approved by the English department chair.

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

ENG W350 - Advanced Expository Writing

Close examination of the assumptions and choices that govern content and style, and practice in the techniques of producing a variety of researched papers incorporating primary and secondary research appropriate to audience and purpose.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Notes

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ENG W405 - Writing Prose - Nonfiction

Study and practice of the essay. Review of historical, thematic, and stylistic range of the form, with emphasis on producing effective, precise communication of thoughtful, informed personal statements.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 2-3.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

Total Credits: 15

Psychology Minor**Program: Minor****Department of Psychology****College of Arts and Sciences**

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

If you are pursuing a major other than psychology, you may earn a minor in psychology by completing the following 15 credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements**PSY 120 - Elementary Psychology**

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

One of the following: Credits: 3

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 & PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 & PSY 369

One of the following: Credits: 3

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Additional credits in a psychology course numbered 200 or above Credits:
3

Total Credits: 15

Public Affairs Minor

Program: Minor

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The minor in public affairs offers you the opportunity to become more knowledgeable in the field of public administration and the policy implications of the public sector. It is available to students who are enrolled in baccalaureate programs and can enhance career opportunities for liberal arts and other majors.

Program Requirements

Each minor requires 15 hours of specified courses with a 2.0 grade-point average, and none of the courses may be taken by correspondence through the Division of Continuing Studies.

SPEA majors may double-count only 6 of the required 15 credit hours in other SPEA major or minor requirements. Students may earn more than one minor from SPEA, but each minor must have at least 9 hours that are not satisfying other major or minor requirements.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

C- or better required

One of the following: Credits: 3

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

Three of the following: Credits: 9

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

(may be repeated)

SPEA V263 - Public Management

This course is an examination of the management process in public organizations in the United States. Special attention will be given to external influences on public managers, the effects of the intergovernmental environment, and in particular, problems of management in a democratic, limited government system.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

SPEA V450 - Contemporary Issues in Public Affairs

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

(may be repeated)

Total Credits: 15

Public Relations Minor

Program: Minor

School of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

The IPFW Journalism Program offers two minors that may be completed as part of a bachelor's program at IPFW. The public relations minor will appeal to those wishing to concentrate in the corporate communications or advertising/public relations industries; the journalism minor described earlier provides basic underpinning for those interested in various media.

These minors are especially appropriate for media and public communication or English communication media majors.

Program Requirements

To earn the minor, you must complete each course with a grade of C or better, with at least 11 of the credits taken as resident credit at IPFW.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

Two of the following: Credits: 6

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J315 - Feature Writing

The course aims to develop skill in gathering and presenting feature story material, exploring the realm between straight news and editorials. It follows feature-story practice in combining information with entertainment stressing the imperative of research, accuracy, and mechanical correctness.

Preparation for Course

P: JOUR J200.

Cr. 3.

Two of the following: Credits: 6

COM 253 - Introduction to Public Relations

An analysis of public relations theory and practice from their origins to the present. From a communication perspective, the course examines public relations environments, audiences, and message strategies.

Cr. 3.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

JOUR J280 - Sophomore Seminar in Journalism

Selected topics in journalism, e.g., professional ethics, government and the press, contemporary problems of the press.

Preparation for Course

P: 6 hours of journalism including C200.

Cr. 3.

Variable Title

(V.T.)

JOUR J390 - Corporate Publications

This course focuses on the practical and specialized concerns of editing and designing newsletters, tabloids, magazines, and newspapers for business, industry, institutions, or other organizations. Attention is given to audience surveys, readability, copy editing, headlines, photographs, cutlines, copyfitting, and printing instruction, with special emphasis on design techniques for the four major types of organizational publications. Includes practice in all facets of publication design. Recommended for persons interested in print communications programs or in developing limited circulation publications. Limited enrollment; consent of instructor required.

Cr. 1-3.

Variable Title

(V.T.)

JOUR J427 - Public Relations in a Democratic Society

Lectures and discussion on dissemination of public information by industry and institutions. Examination of procedures and policies and evaluation of public relations efforts. Contrast public relations practices in America with those in other nations and cultures.

Preparation for Course

P: COM 253 or JOUR J321.

Cr. 3.

One of the following: Credits: 3

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

JOUR J492 - Media Internship

Must have permission to enroll. Supervised professional experience in communications media. Does not contribute to 27 credit hours of required course work in journalism major but will count toward 33 credit hours maximum allowed in journalism and telecommunications. May be repeated, but student may take no more than 3 hours of internship credit for the B.A. either through the Journalism Program or any other academic unit.

Cr. 1-3.

Total Credits: 18

Religious Studies Minor

**Program: Minor Department of Philosophy
College of Arts and Sciences**

Classroom-Medical Building 23~ 260-481-6366 ~ www.ipfw.edu/phil

Religious Studies is an interdisciplinary program housed in the department of philosophy. Students may earn a minor in religious studies by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW. Substitutions for these courses may be made with the approval of the program coordinator.

Program Requirements

REL 112 - Religion and Culture

An introduction to modern academic theories regarding the origin, form, and function of religion in human life supported by case studies drawn from various world religious traditions. Credit not given for both REL 112 and PHIL 112.

Cr. 3.

PHIL 206 - Philosophy of Religion

This course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death.

Cr. 3.

Notes

Indiana Core Transfer Library course.

REL 230 - Religions of the East

A study of the history, teaching, and present institutions of the religions of India, Southeast Asia, China, and Japan. This will include Hinduism, Jainism, Sikhism, Buddhism, Confucianism, Taoism, Shintoism, and Zoroastrianism.

Cr. 3.

REL 231 - Religions of the West

A comparative study of the origins, institutions, and theologies of the three major Western religions, Judaism, Christianity, and Islam.

Cr. 3.

Additional Credits

One course at the 300 level or above with significant emphasis on the academic study of religion. Credits: 3

Note: Must get course approval from the program coordinator.

Total Credits: 15

Sociology Minor

Program: Minor

Department of Sociology

College of Arts and Sciences

Classroom-Medical Building 241 ~ 260-481-6842 ~ www.ipfw.edu/sociology

Program Requirements

If you are pursuing a major other than sociology, you may earn a minor in sociology by completing 15 credits with a grade of C or better in each course, including at least 8 credits as resident credit at IPFW, a minimum of 9 credits at the 300 level or above, and no more than 3 credits of SOC S495 or directed study.

Spanish Minor

Program: Minor
Department of International Language and Culture Studies
College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are pursuing a major other than Spanish, you may earn a minor in Spanish by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Study Abroad Both majors and nonmajors are encouraged to study abroad. For those who wish to study Spanish, Indiana University administers and cosponsors an academic-year program in Madrid, Spain; semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago); and summer programs in Spain (Salamanca) and Mexico (Cuernavaca and Guanajuato).

Program Requirements

- Additional 300- or 400-level Spanish civilization, language, or literature course Credits: 3

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

One of the following 300-level literature courses Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

Total Credits: 15

Spanish Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are already licensed or qualified to be licensed in another area, you may earn a Spanish teaching minor by completing the following 38 credits with a grade of C or better in each course.

Program Requirements

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following 300-level literature courses Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

One of the following culture/civilization courses: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Total Credits: 38

Theatre Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

Program Requirements

You may earn a theatre minor by completing the following courses and earning a grade of C or better in each:

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 168 - Theatre Production I

Application of technical-theatre practice in scenic construction, painting, lighting, sound, costuming, and stage management. Students will be assigned to work on experimental and major stage productions. May be repeated for credit.

Cr. 1.

Hours

Lab. 6.

Must be repeated once for total of 2 credits

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following: Credits: 3

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Theatre electives Credits: 3

Total Credits: 23

Women's Studies Minor

Program: Minor**College of Arts and Sciences**

Classroom-Medical Building 35F ~ 260-481-6711 ~ www.ipfw.edu/wost

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

See College of Arts and Sciences in see Part 4 for further information.

If you are pursuing a major other than women's studies, you may earn a minor in women's studies by completing the following 15 credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW.

Program Requirements

- Credits from cross-listed courses in humanities or visual arts Credits: 3
- Credits from cross-listed courses offered in social science or natural science Credits: 3
- Additional credits in cross-listed or WOST-prefixed courses Credits: 6

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Total Credits: 15

Research Certificate

Anthropology Research Certificate

Program: Research Certificate in Anthropology

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

The student learning outcomes for the degree are as follows:

- Achieve familiarity with different cultures in at least two regions of the world
- Know the major anthropological approaches to understanding the human condition
- Be able to explain societies in a holistic manner
- Achieve competency in writing
- Demonstrate critical thinking
- Acquire quantitative skills for analysis
- Demonstrate a willingness to engage learning and scholarship as a life-long endeavor

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archaeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

ANTH H445 - History and Theory of Anthropology

An examination of the historical development of the field of anthropology concentrating upon the intellectual roots and context that surrounded its emergence as well as contemporary problems, perspectives, methods, and theories. Course designed for graduating anthropology majors.

Preparation for Course

P: ANTH E105 and B200.

Cr. 3.

Cognate Research Tools

Any STAT course or one of the following:

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Research Methods and Supervised Individual Research Credits: 6

Individualized Research

ANTH A495 - Individual Readings in Anthropology

Preparation for Course

P: consent of instructor.

Cr. 1-4.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.
and/or

Research Methods

ANTH P382 - Archaeological Research Design

Construction and implementation of archaeological research design using a graphics-oriented computer simulation model. Computer displays sites, features, and artifacts located by student using various methods of survey and excavation. Hypothesis testing, sampling strategies, and budget constraints are emphasized.

Cr. 3.

ANTH P400 - Archaeological Methods and Techniques

Methods and mechanics of archaeology in field and laboratory. Use of survey instruments, drawing tools, and photographic equipment, treatment of recovered materials leading to printed report.

Preparation for Course

P: consent of instructor.

Cr. 2-4.

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

Total Credits: 15

Note

Each student must present his or her research in a professional forum approved by the anthropology faculty.

Biology Research Certificate

Program: Research Certificate
Department of Biology
College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

- To provide students with significant hands-on experience and training in the use of scientific methods to test hypotheses and to answer questions.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Cognate Research Tools

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Research Methods and Supervised Individual Research Credits: 6

The BIOL 295/595 must contain a prefix in its title to signify laboratory or fieldwork involving the design of an original project and collection and analysis of data.

BIOL 295 - Special Assignments

Special work such as directed reading, library research, and laboratory or field research. The field in which studies are performed will be indicated on the student's record. The substance of the project must be agreed upon by the student and a faculty member and approved by the chair.

Cr. 1-3.

Hours

Class 0-3, Lab. 0-6.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

and/or

BIOL 595 - Special Assignments

Independent study or research or presentation of material not available in the formal courses of the department. The field in which work is offered will be indicated on the student's record. Research projects must be agreed upon by the student and a faculty member and approved by the chair. May be repeated for credit.

Preparation for Course

P: consent of instructor; open only to science majors.

Cr. 1-4.

Hours

Class 2-8, Lab. 0-12.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Dual Level Course

Undergraduate-Graduate

Total Credits: 30

Chemistry Research Certificate

Program: Research Certificate

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

- **Mathematical and quantitative reasoning**
 - Student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.
- **Classical and instrumental laboratory techniques: both analytical and synthetic**
 - Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of a variety of modern instruments and will become proficient in fundamental organic synthetic methods.
- **Individual and collaborative problem-solving**
 - The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.
- **Chemical literature**
 - The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.
- **Philosophy of Science**
 - The student will examine topics at the intersection of science and philosophy, specifically addressing fundamental issues in the history, philosophy, and theoretical structure of modern science.
- **Research in Chemistry**
 - The student will learn research methods and tools appropriate to chemistry and will apply them to the design and execution of a research project. The student will present results of the research project.
- **Summary of key concepts**
 - In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:
 - **Analytical Chemistry**

- Analytical methods (classical and instrumental)
 - Sensitivity and detection limits
 - Statistical treatment of data
- **Biochemistry (for premedicine and pre dental options)**
 - Structure, metabolic relationships, and regulation of biomolecules
- **General Chemistry**
 - Semi-quantitative microscopic model of the physical universe based on macroscopic observations
 - Terminology
 - Periodic relationships
 - Elementary computational skills
 - Introductory laboratory skills
- **Inorganic Chemistry**
 - Chemical bonding and structure
 - Reactivity, reaction mechanisms, and properties
 - Solid state and material science
 - Organometallic chemistry
 - Spectroscopic determination of structure
- **Organic Chemistry**
 - Chemical bonding and structure including valence bond and molecular orbital theories
 - Reactivity, reaction mechanisms, and properties of the important functional groups
 - Synthesis
 - Spectroscopic determination of structure
 - Material science and bio-organic chemistry
- **Physical Chemistry**
 - Mathematical and physical principles that underlie modern Chemistry
 - Detailed understanding of the modern microscopic model of the universe
 - The principal topic areas are:
 1. Quantum Chemistry
 2. Thermodynamics
 3. Statistical mechanics
 4. Spectroscopy
 5. Kinetics

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PHIL 351 - Philosophy of Science

This course examines topics at the intersection of science and philosophy. Primary topics: fundamental principles of the scientific method; the nature of scientific change; the epistemology of science and the debate over scientific realism; scientific convergence and the future of science; consilience of science with nonscience; science and pseudoscience; science and human values. Secondary topics: the strange world of contemporary physics; ethical issues in scientific research; science and religion; science and education; science and the meaning of life.

Cr. 3.

Cognate Research Tools

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Research Methods and Supervised Individual Research

CHM 424 - Analytical Chemistry II

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

Preparation for Course

P: CHM 321; C: CHM 384.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 499 - Special Assignments

Undergraduate research. Students will participate in an original research project with a faculty member. Students are required to submit a written report and make a short oral presentation of their research project. May be repeated for credit.

Cr. 1-5

Hours

Lab. 3-15.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits: 3

Total Credits: 17

Mathematical Sciences Research Certificate

Program: Research Certificate

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students in the program will learn research methods and tools appropriate to the mathematical sciences, learn the foundations of research in the theory of the discipline, learn the advanced communication skills, and apply what they have learned by executing a research project and communicating the results to others.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

Cognate Research Tools

One of the following Credits: 3-4

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Research Methods and Supervised Individual Research

- One upper-level undergraduate or dual-level course in mathematics or statistics appropriate to the area of research (e.g., MA 453, MA 441, MA 575, STAT 517) Credits: 3

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 490 - Topics in Mathematics for Undergraduates

Supervised reading and reports on approved topics in various fields.

Cr. 1-5.

Variable Title

(V.T.)

Credits: 3

Total Credits: 18-19

Physics Research Certificate

Program: Research Certificate

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Add student learning outcome
- Add student learning outcome

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Cognate Research Tools

One of the following Credits: 4

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Research Methods and Supervised Individual Research

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following Credits: 3-4

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 405 - Atomic and Molecular Physics

Basic topics of atomic and molecular physics will be covered in lecture and demonstrations. The course will use fundamental quantum mechanics to describe the hydrogen atom, multi-electron atoms, and simple molecules. The course will also cover the interaction of atoms with other atoms, electrons and photons, and include discussions of various forms of atomic and molecular spectroscopy.

Preparation for Course

P: 342 and 343.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Credits in the following: 6

PHYS 270 - Special Topics in Physics

Specialized topics in physics. May be repeated for credit.

Preparation for Course

P: special permission.

Cr. 1-5.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 470 - Special Topics in Physics

May be repeated for credit.

Preparation for Course

P: special permission.

Cr. 1-5.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 20-21

Psychology Research Certificate

Program: Research Certificate
Department of Psychology
College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate the ability to understand and use the major research methods in psychology, including ethical standards, design, data analysis, and interpretation.

The research certificate is described under Arts and Sciences in Part 4 of this *Bulletin*.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PSY 540 - History of Psychology

A review of the philosophical, theoretical, and methodological issues that entered into the development of modern psychology. Emphasis is placed on historical themes that continue to be active in the science and profession of psychology.

Preparation for Course

P: senior class standing and 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Cognate Research Tools

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

Research Methods and Supervised Individual Research

- PSY 203 - Introduction to Research Methods in Psychology Cr. 3.
- PSY 496 - Readings and Research in Psychology Cr. 3.
(as a research assistant to a faculty member)
- PSY 499 - Honors Thesis in Psychology Cr. 3.

Total Credits: 18

Teacher Certification

Chemistry Teaching Minor

Program: Minor

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are already licensed or qualified to be licensed in another area, you may earn a chemistry teaching minor by completing the following 32 credits with a grade of C or better in each course.

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 32

Earth and Space Science Teaching Minor

Program: Minor

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

If you are already licensed or qualified to be licensed in another area, you may earn an earth and space science teaching minor by completing the following 27–28 credits with a grade of C or better in each course.

Program Requirements

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of following Credits: 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

with GEOL L100 (4 credits)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

One of following Credits: 3

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3

- GEOL G315 - Environmental Conservation

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Total Credits: 27-28

Economics (Social Studies) Teacher Certification

Program: Teacher Certification
College Arts and Sciences

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

The student learning outcomes for the degree are not available, please contact the department.

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in economics and all requirements for teacher certification. Full information on teacher certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC 201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Geology Teacher Certification

Program: Teacher Certification
Department of Geosciences
College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

You may be certified as a teacher of earth and space science after fulfilling the requirements for a B.A. with a major in geology or a B.S. in geology (ENG W233 must be taken as your writing requirement) and the requirements for teacher certification listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Additional information on teacher-certification requirements is available from the School of Education.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School certification) Credits: 4

History (Social Studies) Teacher Certification

Program: Teacher Certification
Department of History
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in history and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Language Arts Teaching Minor

Program: Minor
Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

If you are already licensed or qualified to be licensed in another area, you may earn a language arts teaching minor by completing the following 24 credits with a grade of C or better in each course.

Program Requirements

- One elective 300-level course in British literature Credits: 3
- One elective 300-level course in American literature Credits: 3

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

One of the following Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following Credits: 3

- One course in multicultural literature

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Total Credits: 24

Life Science Teaching Minor

Program: Minor

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

If you are already licensed or qualified to be licensed in another area, you may earn a life science teaching minor by completing the following 29 credits with a grade of C or better in each course.

Program Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Total Credit: 29

Mathematics Teacher Certification Minor

Program: Teacher Certification Minor

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

If you are already licensed or qualified to be licensed in another area, you may earn a mathematics teaching minor by completing the following 26–27 credits with a grade of C or better in each course.

Program Requirements

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3-4

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 26-27

Mild Intervention Certification

In addition to the major in elementary or secondary education, students may earn certification in mild intervention. (This certification qualifies a teacher to teach students with emotional, learning, mild, and moderate disabilities in elementary or secondary school settings, depending on your current license.) Each course in the Mild Intervention Certification must be completed with a grade of C or better. (Note: a 24-credit graduate version of this program is available. See the graduate bulletin for more details.)

Program Requirements

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC K370 - Introduction to Learning Disabilities

Survey of historical development and current status of definitions, classifications, assessment, and treatment procedures for learning-disabled students.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC K441 - Transition Across the Lifespan

This course is designed to give prospective teachers information and skills necessary to effectively teach students with disabilities at the high school level. An overview of characteristics of secondary students with mild disabilities, school programs, transition from school life to adult life, curriculum issues, and strategies of effective instruction for students with disabilities will be covered.

Cr. 3.

EDUC K453 - Management of Academic and Social Behavior

Surveys principles of behavior management as they pertain to educational environments. Students will learn how to define, observe, measure, record, and change academic and social behavior.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC K465 - Service Delivery Systems and Consultation Strategies

Reviews methods of implementing service delivery systems; consulting with professionals and parents; designing in-service training programs; and developing referral systems, curricular and personnel resources, and evaluation techniques used in special education programs.

Cr. 3.

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(Final Course)

And Select:

EDUC K352 - Education of Children with Learning Problems (LD and EMR)

Educational programs for optimum growth and development of educable mentally retarded and learning-disabled children. Study and observation of curriculum content, organization of special schools and classes, and teaching methods and materials.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

And Select:

EDUC K371 - Assessment and Individualized Instruction in Reading and Mathematics

Emphasizes assessment and remediation procedures addressing reading and math problems of mildly handicapped students.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Total Credits: 26

Physical Science Teaching Certification - Chemistry

To earn the physical science teaching certification, you must fulfill all requirements for the B.S. with a major in chemistry or physics, and you must complete ENG W233 as your writing requirement and satisfactorily complete the courses listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Content Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete an initial set of requirements.

Initial Requirements:

- PPST

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 2

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

(a grade of A or B is required)

Block 1: Teacher Education (Prerequisite: Initial Requirements)

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (Prerequisite: Block 1)

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Student Teaching

- EDUC M501 - *Portfolio* Cr. 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area)

Credits: 4

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Additional Credits: 93

Physical Science Teaching Certification Minor

Program: Minor

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are already licensed or qualified to be licensed in another secondary area, you may earn a physical science teaching minor by completing the following 62 credits with a grade of C or better in each course.

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry;

atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 62

Physical Science Teaching Certification-Physics

Students who wish to earn physical science teaching certification should complete the requirements for the B.S. with a major in physics teaching with the following adjustments. In addition, the Praxis II Specialty Area Exam in both physics and chemistry must be completed before or during the student teaching semester, normally in your senior year.

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms
- Will be aware of student conceptual difficulties in learning physics
- Will be aware of effective teaching techniques for physics
- Will be aware of appropriate physics laboratory methods
- Will be aware of effective teaching techniques for chemistry
- Will be aware of appropriate chemistry laboratory methods

Core and Concentration (Major) Courses (Credits: 35)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Supporting Courses (Credits: 44)**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Political Science (Social Studies) Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in political science and all requirements for teacher certification. Full information on teacher certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Notes

Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 credits for the major; these two courses together may not count for more than 9 credits for the major.

Secondary Education Teaching Minor

Program: Minor

Department of Educational Studies

School of Education

In addition to the content area teaching majors, students can also obtain a teaching minor in one or more of the following areas:

Chemistry Teaching Minor (35 credits)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Earth and Space Science Teaching Minor (27–28 credits)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of the following: Credits: 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

French Teaching Minor (34 credits)

- FREN F3xx-4xx - Language elective (300–400 level) Credits: 3
- FREN F3xx-4xx - Literature elective (300–400 level) Credits: 3
- FREN F216 - Second-Year French Conversation Credits: 2

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

FREN F463 - Civilisation Francaise I

French civilization from medieval period through 17th century.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

German Teaching Minor (32 credits)

- GER G3xx-4xxElectives (300–400 level) Credits: 9

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

GER G463 - German Culture

Taught in German.

Preparation for Course

P: 6 credits of 300-level work or departmental permission.

Cr. 3.

GER G464 - Kultur Und Gesellschaft

The interaction of social, intellectual, and artistic forces in German life in the last one to two centuries, stressing interdisciplinary aspects.

Preparation for Course

P: GER G463.

Cr. 3.

One of the following: Credits: 3

- GER G3xx-4xxElectives (300–400 level) Credits: 9

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana

University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Language Arts (English) Teaching Minor (24 credits)

- British literature elective Credits: 3
- American literature elective Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Life Science (Biology) Teaching Minor (29 credits)

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's

permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with

emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Mathematics Teaching Minor (32 credits)**MA 153 - Algebra and Trigonometry I**

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Physical Science Teaching Minor (62 credits)

(This subject area can be used as a minor teaching area or as a certification-only teaching major.)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Physics Teaching Minor (46 credits)

- MA 262 - Linear Algebra and Differential Equations Credits: 4

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Spanish Teaching Minor (38 credits)

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301-S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301-S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Theatre Teaching Minor (24 credits)

- THTR electives Credits: 6

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following: Credits: 3

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Sociology (Social Studies) Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.a. with a major in sociology and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Theatre Teaching Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

A theatre-teaching minor may be earned by completing the following courses and earning a grade of C or better in each required theatre course:

Program Requirements

- Additional theatre course Credits: 6

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following:

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Total Credits: 24

Transfer Program

Agriculture (A.S.)

Program: Transfer Program

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you can complete the first two years of most of the 47 Bachelor of Science programs in agriculture and forestry, the two-year preveterinary program, up to two semesters of the forestry and natural resources programs, two semesters of the preagricultural and biological engineering program, and three semesters of an associate degree program in agriculture. All agriculture degrees must be completed at the West Lafayette campus of Purdue University. The forestry and natural resources and preveterinary programs are listed alphabetically later in this part of the *Bulletin*.

All degree programs in agriculture provide balanced curricula in computer science, mathematics, physical sciences, biological sciences, communication, social sciences, humanities, international understanding or emphasis, and business, plus technical preparation in the selected area of specialization. These programs recognize the need for graduates who are prepared to function effectively in the highly technical world of modern agriculture.

The Purdue University School of Agriculture is one of the nation's highest-ranked and most-prestigious institutions of

agricultural teaching, research, extension, and international programs. The West Lafayette faculty annually prepares more than 2,000 undergraduate and 500 graduate students for careers in the world's food production and distribution systems.

The IPFW agriculture program coordinator will assist you with processing intercampus transfer forms and with arranging affiliation with the appropriate West Lafayette counseling coordinator for the degree program selected. For a listing of degree programs available and additional details about all programs, you should obtain a current Bulletin of the School of Agriculture from the IPFW agriculture dean's program coordinator.

The partial requirements stated below can be completed at IPFW and apply in most B.S. programs in agriculture. Because of professional objectives and accreditation requirements, significant variations exist in some programs such as agricultural and biological engineering, biochemistry, forestry and natural resources, and landscape architecture. Students selecting these options may be able to complete only one or two semesters at IPFW.

It is highly recommended that you keep in contact with the agriculture program coordinator to remain up to date on any changes in the course requirements and to make sure that the requirements of your particular major are being met.

The associate degree with a major in agriculture, which requires at least one semester of full-time study at the West Lafayette campus, helps students who must withdraw before they can finish a Bachelor of Science. You may take, at most, three semesters at IPFW. You may begin with the general course work for agriculture, preforestry, or preveterinary medicine. Within the program, you must complete a specialization in one of the following areas: agricultural economics, agricultural systems management, agronomy, animal sciences, general agriculture, or horticulture. You work out the details of your career (final) semester with the West Lafayette advisor for the specialization you select; it is desirable to establish contact with this advisor before your final semester at IPFW.

To receive the associate degree, you must:

1. Complete at least half the credits for the Bachelor of Science for your declared option (64–65 credits).
2. Earn a minimum graduation GPA of 2.00 or higher.
3. Limit the number of elective credits taken under the pass/not-pass option to 12.
4. Meet the minimum requirements listed below. For course selection at IPFW and assistance with transferring to the West Lafayette campus, you should see the agriculture program coordinator at IPFW.

The assumption is that you will begin with courses that apply to the requirements for general agriculture, preforestry, or preveterinary medicine described in this Bulletin, but if you later choose the A.S. alternative, you must meet the following minimum requirements:

Mathematics and Basic Sciences

- Credits in calculus or statistics Credits: 3
- Credits in other mathematics and basic sciences Credits: 12

Written and Oral Communication

- Credits in written communication Credits: 6
- Credits in oral communication Credits: 3

Broadening Electives

- Credits in economics Credits: 3
- Credits in humanities or social sciences Credits: 3

Departmental Requirements and Electives

- Credits in departmental requirements and electives, at least 18 of which must be earned in School of Agriculture courses Credits: 35

Total Credits: 65

Agriculture (B.S.)

Program: Transfer Programs

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you can complete the first two years of most of the 47 Bachelor of Science programs in agriculture and forestry, the two-year preveterinary program, up to two semesters of the forestry and natural resources programs, two semesters of the preagricultural and biological engineering program, and three semesters of an associate degree program in agriculture. All agriculture degrees must be completed at the West Lafayette campus of Purdue University. The forestry and natural resources and preveterinary programs are listed alphabetically later in this part of the *Bulletin*.

All degree programs in agriculture provide balanced curricula in computer science, mathematics, physical sciences, biological sciences, communication, social sciences, humanities, international understanding or emphasis, and business, plus technical preparation in the selected area of specialization. These programs recognize the need for graduates who are prepared to function effectively in the highly technical world of modern agriculture.

The Purdue University School of Agriculture is one of the nation's highest-ranked and most-prestigious institutions of agricultural teaching, research, extension, and international programs. The West Lafayette faculty annually prepares more than 2,000 undergraduate and 500 graduate students for careers in the world's food production and distribution systems.

The IPFW agriculture program coordinator will assist you with processing intercampus transfer forms and with arranging affiliation with the appropriate West Lafayette counseling coordinator for the degree program selected. For a listing of degree programs available and additional details about all programs, you should obtain a current Bulletin of the School of Agriculture from the IPFW agriculture dean's program coordinator.

The partial requirements stated below can be completed at IPFW and apply in most B.S. programs in agriculture. Because of professional objectives and accreditation requirements, significant variations exist in some programs such as agricultural and biological engineering, biochemistry, forestry and natural resources, and landscape architecture. Students selecting these options may be able to complete only one or two semesters at IPFW.

It is highly recommended that you keep in contact with the agriculture program coordinator to remain up to date on any changes in the course requirements and to make sure that the requirements of your particular major are being met.

You may complete the following courses at IPFW:

Mathematics and Basic Sciences

- Credits in computer science Credits: 3
- Additional credits in mathematics and basic science Credits: 5

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Written and Speech Communication

- Credits in an additional oral or written communication course Credits: 3
- Credits in English composition Credits: 6

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Broadening Electives

- Credits from an approved list of international emphasis electives Credits: 0–3
- Credits from the following social sciences: anthropology, economics, education (limited courses), political science, psychology, and sociology Credits: 3–12
- Credits from the following humanities: education (limited courses), English literature (limited courses), foreign language and literatures, history, philosophy, and fine arts Credits: 6–15

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Agriculture Courses Offered at IPFW

(See your advisor about appropriate selections.)

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

HORT 101 - Fundamentals of Horticulture

Biology and technology involved in the production, storage, processing, and marketing of horticultural plants and products. Laboratories include experiments demonstrating both the theoretical and practical aspects of horticultural plant growth and development.

Cr. 3.

Hours

Class 2, Lab. 2,

Consumer and Family Sciences

Program: Transfer Program

College of Health and Human Services

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

At IPFW, you may complete approximately two years toward the Bachelor of Science options offered by the College of Consumer and Family Sciences at the West Lafayette campus of Purdue University. Majors are in child development and family studies, consumer and family sciences education, foods and nutrition, and consumer sciences retailing.

These degree programs must be completed at West Lafayette. IPFW also offers a B.S. and an A.S. in hospitality areas (see description later in this section).

The details of your general-education requirements and the courses in your field of specialization are determined by your option selection. For this information, you should review the Bulletin of the Purdue University West Lafayette College of Consumer and Family Sciences, www.cfs.purdue.edu. Consult the IPFW Chair of Consumer and Family Sciences to select the appropriate courses for your B.S. option.

Cytotechnology

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/cytotechnology.shtml

At IPFW you may complete three years towards the Bachelor of Science in cytotechnology. You must apply and be admitted to the Cytotechnology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Cytotechnology is a medical laboratory specialty in which microscopic examinations are performed on cell samples from the human body.

Prerequisite Courses – Prior to entering IUPUI's Cytotechnology Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - Biology electives: microbiology, embryology, genetics, animal cell physiology, immunology, and cell biology. With the approval of IUPUI's cytotechnology program director other biology courses may be substituted. Students must earn a total of 25 credit hours in biology, including BIOL 109 or 119, BIOL 215, 216, and 3 upper level courses that include labs. Other electives: art appreciation, medical terminology, statistics, computer science/technology, supervision (OLS), medical microbiology, biochemistry, endocrinology, parasitology, virology, cytogenetics, organic chemistry, physics, and mathematics.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours – 90 These may be completed at IPFW.

Limitations of Course Work - Biology credits earned more than seven years before application must be updated by taking 3 additional credit hours related to cell biology within a period of time not to exceed 12 months before admission. Remedial courses will not fulfill prerequisite hours.

Class Size - Eight each fall semester

Criteria Used for Selection of Class - Cumulative grade point average, biology grade point average, interview

Application Deadline - December 1 of the year prior to desired entry

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained.

Minimum Specific Grade Point Average – 2.5 on a 4.0 scale for all biology course work. This requirement is applied at the time of program application and must be maintained.

Minimum Grade Requirement in a Stated Prerequisite Course – C (2.0 on a 4.0 scale)

Interview – Qualified applicants must participate in an interview. Interviews are conducted between November and January.

Technical Standards - See IUPUI Health Professions Programs policy.

Clinical Observation/Volunteer Experience - While such experience is not required, it is very helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3-5

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

or higher-level math course

Choose one of the following Credits: 4

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

Choose 3 of the following biology courses with labs Credits: 11-12

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

BIOL 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: BIOL 203–204 or equivalent.

Cr. 4.

Session Indicators

(spring)

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

Or select

Cell Biology lecture and lab

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Or select

Animal Physiology lecture and lab

Or select one of the following:

Microbiology

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Electives:

- Humanities elective: Cr. 3
- Social/Behavioral science electives preferably psychology and sociology: Cr. 6
- General electives to bring total credits to 90
- Total Credits: 90

Forestry and Natural Resources

Program: Transfer Program

College of Arts and Sciences

Admission

At IPFW you may complete credits toward one of the five majors — fisheries and aquatic sciences, forestry, natural resources, wildlife, and wood products manufacturing technology — offered by the Department of Forestry and Natural Resources. You must transfer to Purdue University West Lafayette campus for second-year courses in order to have prerequisites for the summer practicum between the sophomore and junior years. You are encouraged to contact a West Lafayette advisor to confirm course selections. The following courses encompass most of the first-year requirements of these majors.

Program Requirements

- Credits in one of the following humanities and social sciences: anthropology; economics; fine arts, music, and theatre (history and appreciation only); foreign language; history; literature; philosophy; political science; psychology; sociology; speech communication Credits: 6
- AGRY 255 - Soil Science Credits: 3

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability,

sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Credits in English composition Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Total Credits: 48

Health Information Administration

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/health.shtml

At IPFW you may complete 55 credit hours toward the Bachelor of Science in health information administration. You must be admitted to the Health Information Administration Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. The professional program is offered via distance learning or classroom delivery. Graduates receive their degree from the IUPUI School of Informatics.

Overview - Health information professionals play a critical role in maintaining, collecting, interpreting, analyzing and protecting data that healthcare providers rely on for research and delivery of quality care.

Prerequisite Courses - Prior to entering IUPUI's Health Information Administration Program, the student must complete at least 56 prerequisite credit hours. All but six of the total prerequisite hours may be completed at IPFW. Two additional prerequisite courses (CSCI N207 and HIA M300) are taken online through IUPUI. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - General electives as needed to complete 61 credit hours. These electives may include management information systems, supervisory management, methods of employee training, computer sciences, research methods, interpersonal communications, Greek and Latin medical terms, and foreign languages.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours – 61 Fifty-five prerequisite hours may be completed at IPFW. Six prerequisite hours are offered online through IUPUI.

Limitations of Course Work - Remedial course work will not qualify as prerequisite credit hours.

Criteria Used for Selection of Class - Completion of prerequisite courses, grade point average, interview

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained. Grades in remedial courses are included in the cumulative grade point average.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale) in anatomy, physiology, computer science, analytic skills/quantitative methods, business administration, and organization/management. Prerequisite courses in anatomy, physiology, computer science, and statistics must be completed prior to enrollment in the program.

Interview - Qualified applicants must participate in an interview.

Clinical Observation/Volunteer Experience - While such experience is not required, it is helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You may also consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-7686 or by e-mail at mrondeau@iupui.edu. The most current program information is found at <http://informatics.iupui.edu/academics/health>.

At IPFW you may complete the following courses:

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Choose one of the following Credits: 3

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing.

Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

One of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and

methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PHIL 326 - Business Ethics

Philosophic examination of such topics as morality and self-interest, freedom and coercion, distributive justice, limits of the law, moral and legal rights, fair equality of opportunity, justice between nations. These topics are seen from a new perspective when they are connected to discussions of fair wages and capitalism, legal constraints on manufacturers and advertisers, affirmative-action programs, environmentalism, and multinational corporations.

Cr. 3.

Choose one of the following Credits: 3

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

Choose one of the following Credits: 3

CS 306 - Computers in Society

Case study analysis of the social impacts of computerization and networking. Topics include computer ethics, crime, privacy, security, reliability, and vulnerability. Other topics include cyberphilia, cyberphobia, censorship, depersonalization, disenfranchisement, automated decision making, artificial intelligence, cognitive science, and ergonomics. Students present projects applying these issues to today's environment.

Preparation for Course

C: junior class standing.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Electives Credits: 5

- Humanities elective: Cr. 3
- General elective: Cr. 2

Total Credits: 55

Two additional prerequisites for this program available online through IUPUI:

- CSCI N207 - Data Analysis Using Spreadsheets Cr. 3
- HIA M300 - Database Design for HIA Cr. 3

Journalism Transfer Program

Program: Transfer Program College of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

At IPFW, you may complete two years of course work toward the Bachelor of Arts offered by the Indiana University School of Journalism at both the Bloomington and Indianapolis campuses. While at IPFW, you may take courses in the fundamental-skills requirements in writing, mathematics, and foreign language; distribution requirements in arts and humanities, natural and mathematical sciences, and social and behavioral sciences; and a maximum of 12 credits in journalism core courses or electives.

Program Requirements

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J300 - Communications Law

History and philosophy of laws pertaining to free press and free speech. Censorship, libel, contempt, obscenity, right of privacy, copyright, government regulations, and business law affecting media operations. Stresses responsibilities and freedoms in a democratic communications system. Required course for journalism majors and IPFW journalism minor. Also required course for radio and television students.

Cr. 3.

One of following Credits: 3

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Total Credits: 12

Notes

Internships and special course approvals are arranged through the IPFW journalism coordinator. Scholarships are available for declared journalism majors for the freshman year at IPFW and for subsequent years throughout the IU system. Applications are available in January.

For further information about journalism requirements and opportunities at IPFW, consult the *Bulletin* of the IU School of Journalism and course descriptions appearing in this *Bulletin*.

Medical Imaging Technology

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahttp/programs/medical.shtml

At IPFW you may complete all but 32 credit hours toward the Bachelor of Science in medical imaging technology. You must apply and be admitted to the Medical Imaging Technology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - A medical imaging technologist is a skilled radiographer qualified to provide patient service in interventional procedures, computed tomography, magnetic resonance imaging, or ultrasonography.

Prerequisite Courses – Prior to entering IUPUI's Medical Imaging Technology Program, the student must complete the minimum prerequisites, which includes an Associate of Science in radiography or its equivalent. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Radiography - Students who earn an Associate of Science in radiography through IPFW will graduate with 60 credit hours in radiography. IUPUI allows entry to the medical imaging technology program with a minimum of 40 college credit hours in radiography.

Suggested Electives— Students must earn a total of 15 credit hours in physical and biological sciences. To complete a minimum of 122 credit hours of academic work for graduation, additional electives may be required.

IUPUI Admission Requirements

Class Size - Based on the availability of clinical education sites for each major area.

Criteria Used for Selection of Class - Evidence of registration by the American Registry of Radiologic Technologists (ARRT), cumulative GPA weighted 40%, essay weighted 20%, radiologic technology GPA weighted 20%, clinical radiologic technology GPA weighted 10%, science/math GPA weighted 10%.

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.8 on a 4.0 scale at the time of application. Grades from all college courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum cumulative grade point average.

Minimum Specific Grade Point Average – 3.0 on a 4.0 scale for all radiologic technology course work. 2.5 on a 4.0 scale for all physical and biological sciences.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Technical Standards - See IUPUI Health Professions Programs policy.

Interview - An interview is not required.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3**COM 114 - Fundamentals of Speech Communication**

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3**MA 153 - Algebra and Trigonometry I**

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3-4

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA

113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Choose one of the following Credits: 1

Consult your advisor about satisfying this requirement.

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Electives To Be Taken Prior To Graduation Credits: 6

- Humanities elective: Cr. 3
- Social/Behavioral Science elective: Cr. 3

Radiography Professional Program Credits: 60

Total Credits: 93-102

Nuclear Medicine

**Transfer Opportunity to IUPUI
Student Success Center
College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahp/programs/nuclear.shtml

At IPFW you may complete two years toward the Bachelor of Science in nuclear medicine technology. You must apply and be admitted to the Nuclear Medicine Technology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Nuclear medicine is a medical specialty in which the nuclear properties of radioactive materials are used for diagnosis and treatment of disease.

Prerequisite Courses - Prior to entering IUPUI's Nuclear Medicine Technology Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - Math/science elective: natural, mathematical or computer science, first aid, nature of cancer, and nutrition. IUPUI allows students to replace MA 153 and MA 154 with four credit hours of advanced calculus. Students must earn a total of 20 credit hours in physical and biological sciences.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours - 60 These may be completed at IPFW.

Class size - Seven each summer session II (late June).

Criteria Used for Selection of Class - Cumulative grade point average, mathematics and science grade point average, interview.

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.8 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained. The grades from all college courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum cumulative grade point average.

Minimum Specific Grade Point Average - 2.5 on a 4.0 scale for life and physical science course work. This requirement is applied at the time of program application and must be maintained. The grades from all college life and physical sciences courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum specific grade point average.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale) or a composite grade for a two-course lecture/lab sequence.

Technical Standards - See IUPUI Health Professions Programs policy.

Interview - Qualified applicants must participate in an interview. Interviews are conducted in January or early February.

Clinical Observation - Applicants must observe in a nuclear medicine facility before the admission interview.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing.

Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 5-6

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Or select:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following sequences Credits: 6-8

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic

acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Or select:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.
and

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Choose one of the following Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Electives:

- Humanities elective Cr. 3
- Social/Behavioral science elective Cr. 3
- Electives to bring total credits in physical and biological science to a minimum of 20
- General electives to bring total credits to 60
- **Total Credits: 60**

Occupational Therapy

Transfer Opportunity to IUPUI**Student Success Center****College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ <http://www.ipfw.edu/hhs/ahttp/programs/occupational.shtml>

The entry-to-practice degree for the occupational therapy profession is now the Master of Science in occupational therapy, a graduate degree. A baccalaureate degree is required to gain entry to the program. At IPFW you may earn any baccalaureate degree and then apply to the Occupational Therapy Program offered by the School of Health and Rehabilitation Sciences at Indiana University-Purdue University Indianapolis (IUPUI). Completion of a baccalaureate degree and prerequisites does not guarantee admission to the IUPUI program.

Overview - Occupational therapy is the health and rehabilitation profession that focuses on maximizing a person's ability to participate in life independently.

Prerequisite Courses - Prior to entering IUPUI's Occupational Therapy Program, students must complete specific prerequisite courses in addition to earning a baccalaureate degree. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Limitations on Course Work - Anatomy, physiology, and statistics prerequisites must be taken within seven years of entry.

Class size - 36

Criteria Used for Selection of Class - Cumulative grade point average (GPA) weighted 40%, prerequisite course work GPA weighted 60%. The total scores are then ranked.

Application Deadline - Applications are available online through IUPUI's occupational therapy website. Applications are accepted from August 1st through January 20th annually and are due in January of the year of desired entry. Program begins Summer Session II (late June).

Minimum Cumulative Grade Point Average - 3.0 on a 4.0 scale.

Minimum Prerequisite Grade Point Average - 3.0 on a 4.0 scale.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Application Policy - For applicants for whom English is not their native language, a minimum TOEFL score of 550 is required.

Technical Standards - Students are required to meet technical standards established by the School of Health and Rehabilitation Sciences. These standards are available from IUPUI upon request.

Clinical Observation - Students must observe occupational therapy practice in three settings for a total of 12 hours and present evidence of this experience. Therapists are often willing to let students observe or "shadow" them, but volunteering also meets this requirement. Students may obtain observation or volunteer hours at any facility that offers occupational therapy.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree. Contact: Student Enrollment Services Coordinator for the School of Health and Rehabilitation Sciences by calling (317)274-7238. The most current program information is found at http://www.shrs.iupui.edu/occupational_therapy/.

Your undergraduate program must include the following:

At IPFW you may complete the following courses:

At IPFW you may complete a prerequisite baccalaureate degree (see above) and must also complete the following courses:

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Choose one of the following Credits: 1-3

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Total Credits: 18-20

Paramedic Sciences

**Transfer Opportunity to IUPUI
Student Success Center
College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahp/programs/paramedic.shtml

At IPFW you may complete one year toward the Associate of Science in paramedic science. You must apply and be admitted to the Paramedic Science Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Paramedics provide care to emergency patients in pre-hospital settings. They determine the nature and extent of victims' emergencies, immobilize fractures, supply intravenous therapy, and provide other life-saving interventions for the victims of acute illness or injury.

Prerequisite Courses – Prior to entering IUPUI's Paramedic Science Program, the student must complete the minimum prerequisites. Exclusive of emergency medical technician (EMT) training, these prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours Exclusive of EMT Training - 23 These may be completed at IPFW. Twenty credit hours of prerequisites must be completed prior to entrance.

Limitations of Course Work - Remedial courses will not fulfill prerequisites or count as credit hours toward the degree.

Class Size - Ten students per cohort entering either spring or fall semester.

Criteria Used for Selection of Class - Grade point average, personal interview, EMT experience.

Application Deadline - October 1 of the year prior to desired spring semester entry. February 1 prior to desired fall semester entry.

Minimum Cumulative Grade Point Average - 2.3 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Certification Requirement - You must be an Indiana or nationally certified EMT with at least 20 hours of documented patient contact in an ambulance to apply to the program.

To Become an Emergency Medical Technologist - Take the EMT Basic Training (7.5 credit) course through Ivy Tech and pass the EMT credentialing exam or complete an EMT course through one of the many local hospitals or township fire departments and pass the EMT credentialing exam. For any questions regarding EMT course work at Ivy Tech Fort Wayne Campus, contact the Ivy Tech EMT Program Chair at (260)480-2087.

Technical Standards - See IUPUI Health Professions Programs policy.

Medical Requirements – All students are required to provide a current immunization record that indicates immunizations in hepatitis B, rubella, rubeola, mumps, PPD, tetanus, and chicken pox.

Interview - Qualified applicants must participate in an interview. Interviews are generally conducted in December for the spring cohort and March for the fall cohort.

Clinical Observation/Volunteer Experience - While such experience is not required, it is helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 113 - Intermediate Algebra

Rational equations, functions, graphs of lines, slope, equations of lines, systems of equations in two variables, absolute value equations and inequalities, distance formula and midpoint formula, radical expressions and equations, rational exponents, quadratic equations and functions and their graphs, applications, and exponential and logarithmic equations and functions and their graphs. No credit toward any degree at IPFW.

Preparation for Course

P: MA 109 with a grade of C- or better or placement by departmental exam.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Total Credits: 23

Physical Therapy**Transfer Opportunity to IUPUI****Student Success Center****College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/physical.shtml

The entry-to-practice degree for the physical therapy profession is now the Doctor of Physical Therapy (D.P.T.), a graduate degree. A baccalaureate degree is required to gain entry to the program. At IPFW you may earn any baccalaureate degree and then apply to the Physical Therapy Program offered by the School of Health and

Rehabilitation Sciences (SHRS) at Indiana University-Purdue University Indianapolis (IUPUI). Completion of a baccalaureate degree and prerequisites does not guarantee admission to the IUPUI program.

Overview - As members of the healthcare team, physical therapists help restore clients to normal functioning of the musculoskeletal and other systems through interventions utilizing therapeutic exercise, physical agents, and assistive devices.

Prerequisite Courses - Prior to entering IUPUI's Physical Therapy Program, students must complete specific prerequisite courses in addition to earning a baccalaureate degree. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing. Listed credit hours are minimums.

IUPUI Admission Requirements

Limitations of Course Work - Prerequisite courses in human anatomy, human physiology, chemistry, physics, and statistics must be completed within seven years of entry. The levels of anatomy, physiology, chemistry, and physics courses must be appropriate for science majors.

Class Size - 36

Criteria Used for Selection of Class - Admission is competitive and decisions will be made based upon cumulative grade point average (GPA) weighted 50%, GRE verbal score weighted 50%, completion of personal essay, and 16 observation hours in two different settings recorded on Generic Abilities Form. The applicants with the highest undergraduate cumulative GPA and verbal GRE scores are offered places in the program, which begins the following fall semester. Applicants ranked 37 to 71 will be given the opportunity to be placed upon a wait list (minimum of 35 slots) and will be considered should a place in the program become available.

Application Deadline – Applications may be submitted beginning August 1 and must be postmarked October 15 of the year prior to desired entry. Applications postmarked after October 15 will not be considered and fees will not be refunded.

Minimum Cumulative Grade Point Average - 3.2 on a 4.0 scale.

Minimum Specific Grade Point Average - 3.2 on a 4.0 scale for math and science course work, which includes grades earned in chemistry, physics, human anatomy, human physiology, and statistics.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Minimum Scores on Graduate Record Examination - 450 on each of verbal and quantitative measures. Test dates for the GRE scores provided must be within seven years of entry.

Application Criteria and Policies - At the time of application, applicants must have completed prerequisites with two or less remaining. Applicants with one or two course prerequisites in progress apply for contingent admission to begin classes in fall semester of the following calendar year. In addition, the applicant's baccalaureate degree must be completed by June 1, immediately prior to fall entry. **NO WAIVERS OR EXCEPTIONS WILL BE GRANTED BY THE PHYSICAL THERAPY PROGRAM.** Applicants who have previously been admitted to an entry-level physical therapy educational program and who then voluntarily or involuntarily leave such a program will not be considered eligible for admission into the Indiana University DPT program. Applicants placed on the wait list who are not accommodated in the class will be considered for admission to the following year's class. They must reapply during the following year's cycle and will compete for entry with that year's application cohort. For applicants for whom English is not their native language, a minimum TOEFL score of 650 is required at time of application. This policy is waived if the applicant has received an undergraduate degree from an accredited school in the United States by the time of entrance into the program.

Cardiopulmonary Resuscitation (CPR) Certification - Students must successfully complete Health Care Professional Level CPR Certification prior to entrance into the program. Certification must be maintained throughout the duration of the program.

Medical Terminology Proficiency - Students must demonstrate proficiency in medical terminology prior to entering the professional program. Proficiency can be demonstrated through formal course work, on-line instruction with certificate of completion, or self-study with departmental examination. Students will also need to be competent writers.

Technical Standards - Students are required to meet technical standards established by the School of Health & Rehabilitation Sciences. These standards are available from IUPUI upon request.

Medical Requirements - Basic immunizations as determined by IUPUI's Student Health Services must be completed by the first day of classes. Students must demonstrate proof of health insurance prior to entry into the program and must maintain health insurance throughout their enrollment.

Clinical Observation/Volunteer Experience - Applicants must complete observational, volunteer, or other work experiences in both hospital inpatient and outpatient physical therapy settings. Each experience must be the equivalent of one day, 8 hours. Each experience must be of sufficient length of time to enable the supervising physical therapist to adequately complete the IU DPT Program's Generic Abilities Assessment Form included as part of the application portfolio.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree. Contact: Student Enrollment Services Coordinator for the School of Health & Rehabilitation Sciences by calling (317)274-7238. The most current program information is found at http://www.shrs.iupui.edu/physical_therapy/.

At IPFW you may complete the following courses:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-

reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8-10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Or select

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Or select

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.
and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

Human Anatomy and Physiology I and II

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select

Anatomy and Physiology I and II

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting

standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Electives:

Humanities/Social sciences electives: Cr. 6

Total prerequisite credits to be included in a baccalaureate degree
Credits: minimum 39

If you choose to satisfy the medical terminology proficiency through coursework, choose one of the following Credits: 1-3

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Prepharmacy

Program: Transfer Program

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

Because the School of Pharmacy and Pharmacal Sciences at the Purdue University West Lafayette campus does not admit first- or second-year students, you must complete at least 64 credits in the two-year prepharmacy program and apply for admission to the school prior to Jan. 1 of the second year. To complete the prepharmacy program at IPFW, you should apply for admission as a prepharmacy student in the College of Arts and Sciences and complete the

requirements listed below. To be considered for admission to the West Lafayette program, you should have at least a B+ average for all courses. If you do not gain admission to the pharmacy school, you may transfer to another program at IPFW. A complete set of degree requirements is available from the School of Pharmacy at West Lafayette.

Program Requirements

- Credits in approved electives Credits: Cr. 9

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Total Credits: 64

Preveterinary

Program: Transfer Program College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you may complete the four-semester preveterinary curriculum, which includes the minimum requirements for admission to the School of Veterinary Medicine at the West Lafayette campus of Purdue University.

If you do not gain admission to veterinary medicine, you may use the curriculum below as the basis for continued study toward a degree in the School of Agriculture at West Lafayette. Students should contact the agriculture dean's deputy early in their academic career to discuss degree options. By substitution of certain BIOL courses, you may pursue this option as a biology major and obtain the B.S. with a major in biology rather than in agriculture.

Program Requirements

You may complete the following courses at IPFW:

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

VM 102 - Careers in Veterinary

Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession.

Cr. 1.

Notes

Pass/not pass basis.

Credits in an agriculture course Credits: 3

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

Credits in English composition Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Credits from the following areas: Credits: 12

- Anthropology
- Communication
- Economics
- History
- Fine arts, music, and theatre (history and appreciation only)
- Foreign language
- Literature
- Philosophy
- Political science
- Psychology
- Sociology

Total Credits: 82

Preveterinary Technology

Program: Transfer Program

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you may complete the four-semester preveterinary curriculum, which includes the minimum requirements for admission into the baccalaureate degree program in veterinary technology at the West Lafayette campus of Purdue University.

Also available are the associate degree program and a distance learning Web-based instruction program for veterinary technology, both administered through Purdue University West Lafayette. For information concerning admission to these programs, please visit this Web site: <http://vet.vet.purdue.edu/vtdl/vtdlhome/>.

The distance-learning program leads to an associate degree from Purdue University while taking all required courses either at the IPFW campus, via distance learning and Web instruction, or in collaboration with local designated clinical mentors and/or veterinarians in the surrounding counties.

Program Requirements

You may complete the following courses for the baccalaureate and associate degree programs at IPFW:

- Nine credits for electives in the following areas: Credits: 9
anthropology, communication, economics, history, philosophy, political science, psychology, sociology

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

VM 102 - Careers in Veterinary

Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession.

Cr. 1.

Notes

Pass/not pass basis.

Total credits available for transfer to Purdue University Programs: 45

Radiation Therapy

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

At IPFW you may complete two years toward the Bachelor of Science in radiation therapy. You must apply and be admitted to the Radiation Therapy Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Non-radiographers and radiographers may apply to the program. Non-radiographers are those who are not registered in radiography by the American Registry of Radiologic Technologists or who have not completed a radiography program accredited by the Joint Review Committee on Education in Radiologic Technology. Entry and program requirements vary depending on radiography background. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Radiation therapy involves the use of ionizing radiation for the treatment of benign and malignant tumors.

Prerequisite Courses - Prior to entering IUPUI's Radiation Therapy Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - The number of elective courses will differ for each student to complete a total of 50 credit hours of prerequisite course work. Additional electives may be required, before or during the professional program, to complete a minimum of 122 credit hours of academic course work for graduation.

IUPUI Admission Requirements

Criteria Used for Selection of Class - Admission to the Radiation Therapy Program is based on an admission index composed of cumulative grade point average, mathematics and science grade point average, prerequisite courses grade point average, interview.

Application Deadline - December 1 of the year prior to desired entry.

Minimum Prerequisite Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application. Grades from remedial courses are not calculated in the grade point average of the prerequisite courses to determine the admission index.

Minimum Specific Grade Point Average - 2.3 on a 4.0 scale for math and science course work. This requirement is applied at the time of program application and must be maintained. Grades from remedial courses are not calculated in the mathematics and science grade point average to determine the admission index.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Interview - A personal interview is required. If the number of applications to the program far exceeds the number of positions available, the program's Admissions Committee reserves the right to limit the number of applicants to be interviewed to two times the number of positions available in the class. Interviews are conducted in January.

Clinical Observation - The student must observe in a radiation oncology facility prior to applying to the program.

Additional Non-Radiographer Admission Requirements

Class Size - Admits 12 Non-radiographers

Minimum Number of Prerequisite Credits - 50

Additional Radiographer Admission Requirements

Minimum Number of Prerequisite Credits - Satisfactory completion of general education and technical specialty requirements.

Minimum Specific Grade Point Average - 2.3 on a 4.0 scale for radiography course work.

Proof of Radiologic Technology Specialty - Applicants must supply evidence of registration in radiography by the ARRT or completion of a radiography program accredited by the Joint Review Committee on Education in Radiologic Technology, such as the Fort Wayne School of Radiography. The technical specialty area is complete for applicants who have completed an associate or baccalaureate degree in radiography.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 5-6

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Or select:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Or select:

Computer Orientation

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.
and

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.
and

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Choose one of the following Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following Credits: 1-3

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Electives:

- Business electives: Cr. 6
- Humanities elective: Cr. 3
- Social/Behavioral science elective: Cr. 3
- General electives to bring total credits to 50
- **Total Credits: 50**

Respiratory Therapy

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ <http://www.ipfw.edu/hhs/ahttp/programs/respiratory.shtml>

At IPFW you may complete two years toward the Bachelor of Science in respiratory therapy. You must apply and be admitted to the Respiratory Therapy Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. The IUPUI respiratory therapy program is part of a hospital- and university-based consortium. Graduates receive their degree from the IU School of Medicine.

Overview - Respiratory therapists evaluate and treat patients with cardiopulmonary disorders and are actively involved in health promotion and disease prevention.

Prerequisite Courses - Prior to entering IUPUI's Respiratory Therapy Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Total Number of Prerequisite Credits - 55 These may be completed at IPFW.

Class Size - Approximately 30 students in the consortium.

Application Deadline - January 1. Late applications will be considered on a space-available basis.

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale - This requirement is applied at the time of program application and must be maintained.

Minimum Specific Grade Point Average - 2.0 on a 4.0 scale for math and science course work. This requirement is applied at the time of program application and must be maintained.

Cardiopulmonary Resuscitation (CPR) Certification - All students are required to complete instruction for adult, child, and infant CPR before entry into the program. This must be the Healthcare Provider CPR or CPR for the Professional Rescuer. These courses are offered for a fee through the American Heart Association and the American Red Cross.

Technical Standards - See IUPUI Health Professions Programs policy. All accepted students will be required to sign a statement certifying that they can meet the program's technical standards.

Medical Requirements - All students are required to complete a medical history and document a complete vaccination program once accepted into the respiratory therapy program.

Interview - Qualified applicants must participate in an interview.

Clinical Observation - Applicants must complete and document at least three hours of clinical observation with a respiratory therapist.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for

students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Choose one of the following Credits: 3

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 362 - Human Development II: Adolescence

A behavioristically oriented analysis of social, personality, and cognitive development in adolescence and youth.

Preparation for Course

P: Sophomore class standing and PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Electives:

- General electives to bring total credits to 55
- **Total Credits: 55**

TransferIN.net: Indiana Core Transfer Library

TransferIN.net: Indiana Core Transfer Library

What is the CTL?

Indiana is working to help you transfer college credits more easily. To enable students to connect college credits, Indiana has developed the Core Transfer Library (CTL) - a list of courses that will transfer among all Indiana public college and university campuses, assuming adequate grades.

Core Transfer Library courses will meet the general or free elective requirements of undergraduate degree programs, and most CTL courses will also count toward degree program requirements - if an equivalent course is taught at your new campus.

At the time of publication, the IPFW courses listed below have been approved as part of the CTL. Additional courses are being added. For complete and up-to-date information, visit www.transferIN.net.

Course List:

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry;

atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

FINA H101 - Art Appreciation

Objectives: to acquaint students with outstanding works of art and to provide an approach to appreciation through knowledge of purposes, techniques, form, and content. No credit toward a fine arts degree.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112; FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See

information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MUS Z101 - Music for the Listener

Introduction to the elements of music through the mode of listening and a historical survey of the way those elements have been used in various types of musical compositions. For non-music majors.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 206 - Philosophy of Religion

This course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 444 - Human Sexual Behavior

A survey of research in human sexuality with the primary focus at the social psychological level. Problems in sex research and theoretical issues will be considered.

Preparation for Course

P: Junior class standing and PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings.

Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Other Programs

**Computer Engineering and Electrical Engineering (B.S.Cmp.E
& B.S.E.E Dual Degree)**

Programs: B.S.Cmp.E. & B.S.E.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

You may choose to complete a dual degree in Computer Engineering and Electrical Engineering by completing all of the requirements in both the B.S.Cmp.E. and the

B.S.E.E

. programs. With overlapping coursework, the dual degree requires 147 hours.

Part 6: Course Descriptions

Part 5 contains course descriptions in alphabetical order.

Standard information for each course includes the number, title, and credits (sometimes called credit hours or semester hours). For some courses, you will find information on the hours of class, laboratory, or studio for which the course is scheduled in each week of a regular semester; these weekly hours are expanded during summer sessions. Fees for courses are assessed on the basis of credits and other factors.

The course-numbering system generally suggests levels of difficulty and appropriateness. Courses at the 100 and 200 levels comprise introductory offerings and those are most commonly taken by freshmen and sophomores. Courses at the 300 and 400 levels are primarily for juniors and seniors. In some Purdue programs, undergraduates take courses at the 500 level, but generally courses numbered 500 and above are for graduate students.

Preparation for courses is indicated as follows:

P: indicates a prerequisite that must precede your enrollment in the course described. You may find one or more specific course numbers, the number of credits you should already have in a subject, a placement-test level, or other conditions.

C: indicates a corequisite that must be taken no later than the same semester in which you take the course described.

R: indicates a recommendation concerning conditions to be met for enrollment in the course.

When no subject code is shown for prerequisites, corequisites, and recommended courses, they are in the same subject area as the course being described. If you lack a prerequisite or corequisite, or if you wish to take a course numbered at a higher level than your present status, you should seek the department's or instructor's consent to enroll in the course.

V.T. means Variable Title and is shown for courses for which the title may be changed to specify the topic or other special focus of each offering.

Session indicators (fall, spring, summer) suggest the times at which courses are generally offered. Scheduling patterns may, however, vary.

IPFW reserves the right to add, withdraw, or change courses without notice.

ACS 521 - Topics in Computer Graphics

ACS 544 - Performance Modeling and Evaluation of Computer Systems

ACS 560 - Software Engineering

ACS 562 - Systems Analysis and Design

ACS 564 - Human-Computer Interaction

ACS 566 - The Strategic Role of Information Systems

ACS 567 - Software Project Management

ACS 568 - Object-Oriented Systems Development

ACS 573 - Advanced Operating Systems

ACS 574 - Advanced Computer Networks

ACS 575 - Database Systems

ACS 576 - Distributed Database Systems

ACS 576 - Distributed Database Systems

ACS 582 - Expert Systems

AFRO A210 - The Black Woman in America

AGR 101 - Introduction to Agriculture and Purdue

AHLT C460 - Clinical Hematology

AHLT C461 - Clinical Analysis of Urine and Body Fluids

AHLT C462 - Clinical Microbiology and Mycology

AHLT C463 - Clinical Parasitology

AHLT C464 - Clinical Serology

AHLT C465 - Clinical Chemistry

AHLT C466 - Clinical Immunohemtology

AHLT C467 - Professional Development Topics in Medical Technology

AHLT R100 - Orientation to Radiologic Technology

AHLT R101 - Radiographic Procedures I

AHLT R102 - Principles of Radiography I

AHLT R181 - Clinical Experience in Radiography

AHLT R182 - Clinical Experience in Radiography

AHLT R185 - Medical Terminology

AHLT R200 - Pathology

AHLT R201 - Radiographic Procedures II

AHLT R202 - Principles of Radiography II

AHLT R205 - Radiographic Procedures III

AHLT R222 - Principles of Radiography III

AHLT R250 - Physics Applied to Radiology

AHLT R260 - Radiation Biology and Protection in Diagnostic Radiology

AHLT R281 - Clinical Experience in Radiography

AHLT R282 - Clinical Experience in Radiography

AHLT R283 - Clinical Experience in Radiography

AHLT R290 - Comprehensive Experience

AMST A200 - Comparative American Identities

AMST A301 - The Question of American Identity

AMST A440 - Senior Seminar in American Studies

AMST A441 - America in Global Perspective

ANSC 101 - Animal Agriculture

ANSC 221 - Principles of Animal Nutrition

ANTH A200 - Topics in Anthropology

ANTH A460 - Topics in Anthropology

ANTH A495 - Individual Readings in Anthropology

ANTH A496 - Field Study in Anthropology

ANTH B200 - Bioanthropology

ANTH B426 - Human Osteology

ANTH E102 - Anthropology of America

ANTH E105 - Culture and Society

ANTH E200 - Social and Cultural Anthropology

ANTH E301 - Plain People of Indiana

ANTH E310 - Introduction to the Cultures of Africa

ANTH E320 - Indians of North America

ANTH E321 - Peoples of Mexico

ANTH E330 - Indians of South America

ANTH E335 - Ancient Civilizations of Mesoamerica

ANTH E341 - Culture of China

ANTH E350 - European Ethnography

ANTH E356 - Cultures of the Pacific

ANTH E375 - Cultural Psychiatry

ANTH E400 - Undergraduate Seminar

ANTH E401 - Ecology and Culture

ANTH E402 - Gender in Cross-Cultural Perspective

ANTH E405 - Principles of Social Organization

ANTH E406 - Anthropology and Documentary Films

ANTH E420 - Economic Anthropology

ANTH E421 - The Anthropology of Aging

ANTH E445 - Medical Anthropology

ANTH E455 - Anthropology of Religion

ANTH E457 - Ethnic Identity

ANTH E462 - Anthropological Folklore

ANTH E470 - Psychological Anthropology

ANTH E479 - Indian Cultures of Peru

ANTH H445 - History and Theory of Anthropology

ANTH L200 - Language and Culture

ANTH L400 - Seminar in the Ethnography of Communication

ANTH P200 - Introduction to Prehistoric Archaeology

ANTH P220 - Rise and Fall of Ancient Civilizations

ANTH P240 - Archaeology and the Movies

ANTH P300 - Topics in Prehistory

ANTH P310 - Old World Archaeology

ANTH P360 - Archaeology of North America

ANTH P361 - Prehistory of Eastern North America

ANTH P370 - Ancient Cultures of South America

ANTH P376 - Archaeology of Death

ANTH P382 - Archaeological Research Design

ANTH P399 - Undergraduate Seminar

ANTH P400 - Archaeological Methods and Techniques

ANTH P405 - Fieldwork in Archaeology

ARET 123 - Construction Graphic Communication

ARET 124 - Architectural Engineering Construction I

ARET 167 - Construction Systems and Materials

ARET 222 - Architectural Engineering Construction II

ARET 281 - Environmental Equipment for Buildings I

ARET 282 - Environmental Equipment for Buildings II

ARET 321 - Architectural Presentation Techniques I

ARET 324 - Sustainable Construction

ARET 354 - Principles of Land Use

ARET 355 - Techniques of Land Utilization

ARET 384 - Environmental Equipment for Buildings III

ARET 499 - Architectural Engineering Technology

AST A100 - The Solar System

AST L100 - Solar System Laboratory

AUS 115 - Introduction to Communicative Disorders

AUS 181 - First Course in American Sign Language

AUS 182 - Second Course in American Sign Language

AUS 302 - Acoustic Bases of Speech and Hearing

AUS 304 - Anatomy and Physiology of the Speech and Hearing Mechanism

AUS 306 - Introduction to Phonetics

AUS 309 - Language Development

AUS 399 - Directed Study in Audiology and Speech Sciences

AUS 405 - Augmentative and Computer Applications in Speech and Language

AUS 420 - Introduction to Developmental Speech and Language Disorders

AUS 430 - Speech-Language Disorders in Healthcare Settings

AUS 449 - Introduction to Clinical Practice in Speech-Language Pathology

AUS 460 - Introduction to Assessment Audiology

AUS 516 - Foundations of Assessment in Communication Disorders

AUS 521 - Phonetic and Phonological Disorders in Children

AUS 549 - Clinical Practice in Speech/Language Pathology I

AUS 550 - Aural Rehabilitation for Adults

AUS 551 - Aural Rehabilitation for Children

AUS 590 - Directed Study of Special Problems

BIOL 100 - Introduction to the Biological World

BIOL 100L - Introduction to the Biological World Laboratory

BIOL 105 - Medical Terminology

BIOL 108 - Biology of Plants

BIOL 109 - Biology of Animals

BIOL 117 - Principles of Ecology and Evolution

BIOL 119 - Principles of Structure and Function

BIOL 126 - Human Biology

BIOL 127 - Introduction to Human Diseases

BIOL 140 - Marine Biology

BIOL 183 - Professional Practice I

BIOL 184 - Professional Practice II

BIOL 195 - Special Assignments

BIOL 203 - Human Anatomy and Physiology

BIOL 204 - Human Anatomy and Physiology

BIOL 215 - Basic Human Anatomy

BIOL 216 - Basic Mammalian Physiology

BIOL 217 - Intermediate Ecology

BIOL 218 - Genetics and Molecular Biology

BIOL 219 - Principles of Functional Biology

BIOL 220 - Microbiology for Allied Health Professionals

BIOL 250 - Women and Biology

BIOL 284 - Professional Practice III

BIOL 295 - Special Assignments

BIOL 304 - Major Ideas in Biology

BIOL 304 - Major Ideas in Biology (Honors Course)

BIOL 315 - Developmental Anatomy

BIOL 317 - Addictions: Biology, Psychology, and Society

BIOL 326 - Heredity: A Human Perspective

BIOL 326 - Heredity: A Human Perspective (Honors Course)

BIOL 327 - Biology of Aging

BIOL 334 - Clinical Pathophysiology

BIOL 335 - Animal Behavior

BIOL 336 - Animal Behavior Lab

BIOL 345 - Vertebrate Biology

BIOL 349 - Environmental Science

BIOL 350 - Plant Physiology

BIOL 381 - Cell Biology

BIOL 382 - Laboratory in Cell Biology

BIOL 386 - Professional Practice IV

BIOL 434 - Marine Community Ecology

BIOL 437 - General Microbiology

BIOL 445 - Aquatic Biology

BIOL 487 - Professional Practice V

BIOL 491 - Senior Biology Seminar

BIOL 501 - Field Botany

BIOL 502 - Conservation Biology

BIOL 505 - Biology of Invertebrate Animals

BIOL 506 - Human Molecular Genetics

BIOL 509 - Molecular Biology and Applications

BIOL 515 - Molecular Genetics

BIOL 516 - Molecular Biology of Cancer

BIOL 520 - Contemporary Parasitology

BIOL 533 - Medical Microbiology

BIOL 537 - Immunobiology

BIOL 540 - Biotechnology

BIOL 543 - Population Ecology

BIOL 544 - Principles of Virology

BIOL 556 - Physiology I

BIOL 559 - Endocrinology

BIOL 565 - Immunobiology Lab

BIOL 566 - Developmental Biology

BIOL 567 - Laboratory in Developmental Biology

BIOL 579 - Fate of Chemicals in the Environment

BIOL 580 - Evolution

BIOL 582 - Ecotoxicology

BIOL 584 - Molecular Biology and Applications Laboratory

BIOL 586 - Topics in Behavior and Ecology

BIOL 592 - The Evolution of Behavior

BIOL 595 - Special Assignments

BIOL 598 - Biology of Fish

BUFW X295 - Practicum in Business

BUFW X380 - Professional Practice in Business

BUFW X381 - Professional Practice in Business

BUS A201 - Principles of Financial Accounting

BUS A202 - Principles of Managerial Accounting

BUS A311 - Intermediate Accounting I

BUS A312 - Intermediate Accounting II

BUS A314 - Financial Statement Analysis

BUS A317 - Computer-Based Accounting Systems

BUS A325 - Cost Accounting

BUS A328 - Introduction to Taxation

BUS A331 - Taxation of Business Entities

BUS A332 - Taxation of Individuals

BUS A335 - Fund Accounting

BUS A336 - Internship in Accounting

BUS A339 - Advanced Income Tax

BUS A422 - Advanced Financial Accounting

BUS A424 - Auditing

BUS A425 - Contemporary Accounting Theory

BUS A437 - Advanced Management Accounting

BUS A439 - Advanced Auditing

BUS A490 - Independent Study in Accounting

BUS D300 - International Business Administration

BUS D490 - Special Studies in International Business Administration

BUS F260 - Personal Finance

BUS F301 - Financial Management

BUS F303 - Intermediate Finance

BUS F310 - Financial Statement Analysis - Finance Perspective

BUS F345 - Money/Banking/Capital Markets

BUS F350 - Futures and Options Markets

BUS F420 - Equity and Fixed Income Investments

BUS F446 - Management of Commercial Banks and Other Financial Institutions

BUS F480 - Professional Practice in Finance

BUS F490 - Independent Study in Finance

BUS F494 - International Finance

BUS G300 - Introduction to Managerial Economics

BUS J100 - Introduction to College and Business Careers

BUS J200 - Business Degree Seminar

BUS J300 - Business Forum: Management of Diversity in Organizations

BUS J401 - Policy and Strategy

BUS K200 - Computer Literacy Concepts for Business

BUS K211 - Spreadsheets for Business

BUS K212 - Introduction to Database Management

BUS K213 - Internet Literacy for Business

BUS K214 - Introduction to Word Processing

BUS K215 - Basic Programming for Business

BUS K216 - Business Graphics

BUS K321 - Management of Information Technology

BUS K327 - Deterministic Models in Operations Research

BUS K409 - E-Business

BUS K490 - Independent Study in Decision Sciences

BUS L200 - Elements of Business Law

BUS L303 - Commercial Law II

BUS M301 - Marketing Management in a Competitive Environment

BUS M303 - Marketing Research

BUS M405 - Buyer Behavior

BUS M408 - Quantitative Methods for Marketing Management

BUS M415 - Advertising and Promotion Management

BUS M420 - New Product Management

BUS M426 - Sales Management

BUS M450 - Marketing Strategy and Policy

BUS M490 - Independent Study in Marketing

BUS P301 - Managing Operations in a Competitive Environment

BUS P421 - Operations Planning and Control

BUS P490 - Independent Study in Operations Management

BUS W100 - Principles of Business Administration

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

BUS W311 - Small Business Entrepreneurship

BUS W312 - Entrepreneurship

BUS W430 - Leadership, Teamwork, and Group Dynamics in Organizations

BUS W490 - Independent Study in Business Administration

BUS X394 - Practicum in Business

BUS Z302 - Management of Organizations and People

BUS Z440 - Personnel: Human Resources Management

BUS Z444 - Personnel Research and Measurement

BUS Z490 - Independent Study in Personnel Management and Organizational Behavior

BUS Z490 - Independent Study in Personnel Management and Organizational Behavior (Honors Course)

CDFS 255 - Introduction to Couple and Family Relationships

CE 191 - Civil Engineering Practice I

CE 200 - Fundamentals of Surveying

CE 210 - Introduction to Geomatics

CE 250 - Statics

CE 251 - Dynamics

CE 252 - Strength of Materials

CE 291 - Civil Engineering Practice II

CE 315 - Civil Engineering Materials

CE 316 - Civil Engineering Materials Laboratory

CE 318 - Fluid Mechanics

CE 319 - Fluid Mechanics Laboratory

CE 330 - Construction Management

CE 345 - Transportation Engineering

CE 365 - Environmental Engineering

CE 366 - Environmental Engineering Laboratory

CE 375 - Structural Analysis

CE 376 - Design of Concrete Structures

CE 379 - Numerical Methods for Engineers

CE 380 - Soil Mechanics

CE 381 - Soil Mechanics Laboratory

CE 391 - Civil Engineering Practice III

CE 418 - Hydraulics Engineering

CE 451 - Traffic Engineering

CE 475 - Design of Steel Structures

CE 480 - Finite Element Analysis

CE 487 - Civil Engineering Design Project I

CE 488 - Civil Engineering Design Project II

CE 490 - Selected Topics in Civil Engineering

CE 491 - Civil Engineering Practice IV

CE 492 - Civil Engineering Practice V

CE 570 - Advanced Structural Mechanics

CET 104 - Elementary Surveying

CET 108 - Route Surveying and Design

CET 206 - Construction Surveying

CET 209 - Land Surveying and Subdivision

CET 253 - Hydraulics and Drainage

CET 266 - Materials Testing

CET 353 - Hydraulics and Drainage II

CET 381 - Structural Analysis

CET 385 - Fundamentals of Reinforced Concrete

CET 409 - Property Surveying

CET 431 - Properties and Behavior of Soils

CET 453 - Water and Waste-Water Technology

CET 482 - Steel Structure Design

CET 484 - Wood Timber and Formwork

CET 499 - Civil Engineering Technology

CFS 399 - Special Issues

CHM 102 - Lectures in Chemical Science for Engineers

CHM 104 - Living Chemistry

CHM 111 - General Chemistry

CHM 112 - General Chemistry

CHM 115 - General Chemistry

CHM 116 - General Chemistry

CHM 120 - Chemistry and Art

CHM 151 - Elementary Chemistry I

CHM 183 - Cooperative Work Experience I

CHM 184 - Cooperative Work Experience II

CHM 218 - Introduction to Inorganic Chemistry

CHM 224 - Introductory Quantitative Analysis

CHM 251 - Organic Chemistry

CHM 252 - Organic Chemistry Laboratory

CHM 254 - Organic Chemistry Laboratory

CHM 255 - Organic Chemistry

CHM 256 - Organic Chemistry

CHM 258 - Organic Chemistry Laboratory

CHM 261 - Organic Chemistry

CHM 262 - Organic Chemistry

CHM 265 - Organic Chemistry Laboratory

CHM 266 - Organic Chemistry Laboratory

CHM 280 - Chemical Literature

CHM 284 - Cooperative Work Experience III

CHM 290 - Selected Topics in Chemistry for Lower Division Students

CHM 321 - Analytical Chemistry I

CHM 342 - Inorganic Chemistry

CHM 343 - Inorganic Chemistry Laboratory

CHM 371 - Physical Chemistry

CHM 376 - Physical Chemistry Laboratory

CHM 383 - Physical Chemistry

CHM 384 - Physical Chemistry

CHM 385 - Physical Chemistry

CHM 386 - Cooperative Work Experience IV

CHM 424 - Analytical Chemistry II

CHM 487 - Cooperative Work Experience V

CHM 490 - Selected Topics in Chemistry for Upper Division Students

CHM 495 - Seminar in Chemistry

CHM 496 - Advances in Chemistry I

CHM 497 - Advances in Chemistry II

CHM 499 - Special Assignments

CHM 502 - Modern Chemistry in the High School

CHM 505 - Advanced Chemistry for Teachers I

CHM 506 - Advanced Chemistry for Teachers II

CHM 525 - Intermediate Analytical Chemistry

CHM 528 - Principles and Practice of NMR

CHM 533 - Introductory Biochemistry

CHM 534 - Introductory Biochemistry

CHM 535 - Biochemistry Laboratory

CHM 542 - Inorganic Chemistry

CHM 548 - Radiochemistry

CHM 561 - Fundamental Organic Chemistry

CHM 563 - Organic Chemistry

CHM 577 - Physical Chemistry

CHM 578 - Physical Chemistry

CHM 599 - Special Assignments

CLAS C205 - Classical Mythology

CLAS C405 - Comparative Mythology

CMLT C217 - Detective and Mystery Literature

CMLT C255 - Modern Literature and the Other Arts: An Introduction

CMLT C333 - Romanticism

CMLT C337 - The 20th Century: Tradition and Change

CMLT C340 - Women in World Literature

CNET 190 - Experience in Construction I

CNET 276 - Specs, Contracts, and Codes

CNET 280 - Quantity Estimating

CNET 290 - Experience in Construction II

CNET 344 - Constructed Project Quality I

CNET 348 - Senior Capstone Design Project I

CNET 390 - Experience in Construction III

CNET 441 - Construction Operations

CNET 442 - Costs Estimating

CNET 443 - Engineered Construction

CNET 445 - Construction Project Management I

CNET 448 - Senior Capstone Design Project II

CNET 454 - Construction Legal Aspects

CNET 455 - Company Management

CNET 457 - Construction Safety

CNET 499 - Construction Engineering Technology

COAS W111 - Critical Inquiry

COAS W398 - Internship in Professional Practice

COM 114 - Fundamentals of Speech Communication

COM 114H - Fundamentals of Speech Communication

COM 120 - Introduction to Communication Technology and Communication Fields

COM 210 - Debating Public Issues

COM 212 - Approaches to the Study of Interpersonal Communication

COM 212 - Approaches to the Study of Interpersonal Communication (Honors Course)

COM 248 - Introduction to Media Criticism and Analysis

COM 250 - Mass Communication and Society

COM 251 - Introduction to the Electronic Mass Media

COM 253 - Introduction to Public Relations

COM 300 - Introduction to Communication Research Methods

COM 303 - Intercultural Communication

COM 308 - Applied Communication

COM 310 - Family Communication

COM 312 - Rhetoric in the Western World

COM 314 - Advanced Presentational Speaking

COM 315 - Speech Communication of Technical Information

COM 316 - Controversy in American Society

COM 316H - Controversy in America- Honors

COM 318 - Principles of Persuasion

COM 320 - Small Group Communication

COM 323 - Business and Professional Speaking

COM 324 - Introduction to Organizational Communication

COM 325 - Interviewing: Principles and Practice

COM 330 - Theories of Mass Communication

COM 331 - Audio Production

COM 332 - Television Studio Production

COM 333 - Film Production

COM 334 - Journalism for the Electronic Mass Media

COM 337 - Advanced Digital Video Production

COM 338 - Documentary or Experimental Film and Video

COM 352 - Mass Communication Law

COM 410 - Gender Roles and Communication

COM 421 - Media Genres

COM 422 - Women, Men, and Media

COM 431 - Practicum in Radio

COM 432 - Practicum in Television

COM 433 - Practicum in Film

COM 436 - Script Writing

COM 471 - Communicating Peace

COM 480 - Senior Seminar in Communication

COM 490 - Internship in Communication

COM 491 - Special Topics in Communication

COM 491H - Special Topics in Communication-Honors

COM 493 - Interdisciplinary Undergraduate Seminar

COM 502 - Classroom Communication

COM 507 - Introduction to Semiotics

COM 508 - Nonverbal Communication in Human Interaction

COM 512 - Theories of Interpersonal Communication

COM 515 - Persuasion in Social Movements

COM 516 - Analysis of Persuasive Messages

COM 517 - Communication in Politics

COM 518 - Theories of Persuasion

COM 520 - Small Group Communication

COM 521 - Theories of Rhetoric

COM 522 - History and Criticism of Public Communication

COM 523 - Communication in Personal Relationships

COM 525 - Advanced Interviewing

COM 527 - Introduction to Cultural Studies

COM 531 - Special Topics in Mass Communication

COM 532 - Telecommunication Systems Management

COM 534 - Comparative Telecommunication Systems

COM 537 - Educational/Instructional Television

COM 557 - Legal Dimensions of Communication

COM 559 - Current Trends in Mass Communication Research

COM 560 - Rhetorical Dimensions of Mass Media

COM 563 - Public Policy in Telecommunication

COM 574 - Organizational Communication

COM 582 - Descriptive/Experimental Research in Communication

COM 584 - Historical/Critical Research in Communication

COM 590 - Directed Study of Special Problems

COM 597 - Special Topics in Communication

COM 598 - Synthesis Paper Research

CPET 101 - Electrical Circuits

CPET 161 - Analog Electronics

CPET 181 - Computer Operating Systems Basics

CPET 190 - Problem Solving with MATLAB

CPET 213 - Web-based Analysis and Design

CPET 281 - Local Area Networks and Management

CPET 299 - Selected Computer Engineering Technology Subjects

CPET 355 - Data Communications and Networking

CPET 364 - Networking Security

CPET 375 - Microprocessor-Based Digital Systems

CPET 384 - Wide Area Network Design

CPET 411 - Microcomputer Interfacing

CPET 470 - Technology Project Management

CPET 472 - Automatic Control Systems

CPET 486 - Robotics and Control Electronics with Microcomputers

CPET 490 - Senior Design Project I

CPET 491 - Senior Design Project II

CPET 493 - Wireless Networking

CPET 494 - Java Programming Applications

CPET 495 - Web Engineering and Design

CPET 499 - Computer Engineering Technology

CPET 545 - Service-Oriented Architecture and Enterprise Applications

CPET 565 - Mobile Computing Systems

CPET 575 - Management of Technology

CPET 581 - Workshop In Computer Engineering Technology

CPET 590 - Special Problems in IT and Advanced Computer Applications

CPET 598 - Directed MS Project

CPT 555 - Advanced Network Security

CS 112 - Survey of Computer Science

CS 114 - Introduction to Visual Basic

CS 155 - COBOL Programming

CS 160 - Introduction to Computer Science I

CS 160H - Introduction to Computer Science I Honors

CS 161 - Introduction to Computer Science II

CS 170 - C and Data Structures

CS 172 - Introduction to C

CS 203 - Advanced Visual Basic

CS 232 - Introduction to C and Unix

CS 256 - Applications Software Project

CS 260 - Data Structures

CS 270 - Assembly Language

CS 271 - Computer Architecture

CS 274 - Data Communications

CS 280 - Survey of Information Technology

CS 292 - Intermediate Topics in Computer Science

CS 295 - Industrial Practicum

CS 306 - Computers in Society

CS 310 - Topics In Computer Languages

CS 321 - Introduction to Computer Graphics

CS 331 - Introduction to C++ and Object-Oriented Programming

CS 350 - Programming Language Design

CS 360 - Software Engineering

CS 364 - Introduction to Database Systems

CS 365 - Advanced Database Systems

CS 366 - Structured Analysis Techniques

CS 367 - Structured Design Techniques

CS 368 - Human-Computer Interaction

CS 370 - Systems Programming

CS 372 - Web Application Development

CS 374 - Computer Networks

CS 376 - Advanced Computer Architecture

CS 380 - Artificial Intelligence

CS 384 - Numerical Analysis

CS 395 - Industrial Practice I

CS 421 - Advanced Computer Graphics

CS 445 - Computer Security

CS 460 - Capstone Design and Professional Practice

CS 464 - Computer Systems Planning

CS 466 - Strategic Issues for Information Systems

CS 467 - Project Management

CS 472 - Operating Systems Design

CS 474 - Compiler Construction

CS 486 - Analysis of Algorithms

CS 488 - Theory of Computation

CS 492 - Topics in Computer Science

CS 494 - Directed Study

CS 495 - Cooperative Experience

CS 503 - Operating Systems

CS 514 - Numerical Analysis

CS 520 - Computational Methods in Analysis

CS 543 - Introduction to Simulation and Modeling of Computer Systems

CS 547 - Information Storage and Retrieval and Natural Language Processing

CS 572 - Heuristic Problem Solving

CS 580 - Algorithm Design, Analysis, and Implementation

CS 590 - Topics in Computer Science

DANC 101 - Modern Dance I

DANC 102 - Ballet I

DANC 103 - Jazz Dance I

DANC 121 - Tap Dance I

DANC 134 - The Study of Movement in Human Society

DANC 136 - Teaching Dance: Theories and Methods

DANC 201 - Modern Dance II

DANC 202 - Ballet II

DANC 203 - Jazz Dance II

DANC 221 - Tap Dance II

DANC 240 - Fundamentals of Dance Composition

DANC 251 - Dance History

DAST A111 - Oral Pathology, Physiology, and Anatomy

DAST A112 - Dental and Medical Emergencies and Therapeutics

DAST A121 - Microbiology and Asepsis Technique

DAST A122 - Introduction to Dentistry

DAST A131 - Dental Materials I

DAST A132 - Dental Materials II

DAST A141 - Preventive Dentistry and Nutrition

DAST A171 - Clinical Science I

DAST A172 - Clinical Science II

DAST A182 - Practice Management, Ethics, and Jurisprudence

DAST A190 - Expanded Functions (Restorative)

DAST A300 - Special Topics in Dental Education

DHYG D401 - Clinical Supervision

DHYG D402 - Clinical Supervision

DHYG H211 - Head and Neck Anatomy

DHYG H214 - Oral Anatomy

DHYG H215 - Pharmacology and Therapeutics (lecture)

DHYG H216 - Chemistry and Nutrition- First Year

DHYG H217 - Preventive Dentistry

DHYG H218 - Fundamentals of Dental Hygiene (lecture and lab)

DHYG H219 - Clinical Practice I

DHYG H221 - Clinical Dental Hygiene Procedures

DHYG H222 - Advanced Clinical Dental Hygiene Procedures

DHYG H242 - Introduction to Dentistry - Specialties

DHYG H301 - Clinical Practice II

DHYG H302 - Clinical Practice III

DHYG H303 - Radiology (lecture and lab)

DHYG H304 - Oral Pathology

DHYG H305 - Radiology Clinic I

DHYG H306 - Radiology Clinic II

DHYG H307 - Radiology Clinic III

DHYG H308 - Dental Materials

DHYG H309 - Practice of Community Dental Hygiene

DHYG H310 - Technical Writing

DHYG H320 - Practice Management, Ethics, and Jurisprudence

DHYG H321 - Periodontics

DHYG H344 - Senior Hygiene Seminar

DHYG H347 - Dental Public Health

DHYG H405 - Advanced Dental Sciences

DLTP D111 - History, Ethics, Organization

DLTP D112 - Dental Anatomy

DLTP D113 - Basic Physics, Chemistry, and Dental Materials

DLTP D114 - Occlusion

DLTP D125 - Crown and Bridge Prosthodontics I

DLTP D126 - Orthodontics/ Pedodontics Appliances I

DLTP D127 - Complete Denture Prosthodontics I

DLTP D128 - Partial Denture Prosthodontics I

DLTP D129 - Dental Ceramics I

DLTP D215 - Crown and Bridge Prosthodontics II

DLTP D216 - Orthodontics/ Pedodontics Appliances II

DLTP D217 - Complete Denture Prosthodontics II

DLTP D218 - Partial Denture Prosthodontics II

DLTP D219 - Dental Ceramics II

DLTP D221 - Dental Laboratory Business Procedures

DLTP D222 - Practical Laboratory Experience

DLTP D225 - Specialty in Crown and Bridge Prosthodontics

DLTP D226 - Specialty in Orthodontics/ Pedodontics

DLTP D227 - Specialty in Complete Denture Prosthodontics

DLTP D228 - Specialty in Partial Denture Prosthodontics

DLTP D229 - Specialty in Dental Ceramics

EALC C101 - Elementary Chinese I

EALC C102 - Elementary Chinese II

EALC C201 - Second-Year Chinese I

EALC C202 - Second-Year Chinese II

EALC E232 - China: The Enduring Heritage

ECE 201 - Linear Circuit Analysis I

ECE 202 - Linear Circuit Analysis II

ECE 207 - Electronic Measurement Techniques

ECE 208 - Election Devices and Design Laboratory

ECE 255 - Introduction to Electronic Analysis and Design

ECE 270 - Introduction to Digital System Design

ECE 291 - Industrial Practice I

ECE 292 - Industrial Practice II

ECE 293 - Measurements and Instrumentation

ECE 301 - Signals and Systems

ECE 302 - Probabilistic Methods in Electrical Engineering

ECE 311 - Electric and Magnetic Fields

ECE 351 - Software Engineering

ECE 358 - Introduction to VHDL Programming

ECE 362 - Microprocessor Systems and Interfacing

ECE 368 - Data Structures

ECE 373 - Numerical Methods for Engineers

ECE 382 - Feedback System Analysis and Design

ECE 387 - Electronics and System Engineering Through Robotics

ECE 388 - Electronics and System Engineering Through Robotics Lab

ECE 393 - Industrial Practice III

ECE 394 - Industrial Practice IV

ECE 395 - Industrial Practice V

ECE 405 - Senior Engineering Design I

ECE 406 - Senior Engineering Design II

ECE 418 - Introduction to Computer Graphics

ECE 425 - Electric Machines,

ECE 436 - Digital Signal Processing

ECE 437 - Computer Design and Prototyping

ECE 442 - Transmission of Information

ECE 443 - Communications Laboratory

ECE 447 - Modern Filter Design

ECE 460 - Power Electronics

ECE 465 - Embedded Microprocessors

**ECE 467 - Advanced Digital Systems/ Embedded Microcontroller Design
Laboratory**

ECE 469 - Operating Systems Engineering

ECE 483 - Digital Control Systems - Analysis and Design

ECE 495 - Selected Topics in Electrical Engineering

ECE 496 - Electrical Engineering Projects

ECE 497 - Research in Electrical Engineering I

ECE 498 - Research in Electrical Engineering II

ECE 535 - Transmission and Distribution of Electric Energy

ECE 543 - Wireless Communication Networks

ECE 547 - Introduction to Computer Communication Networks

ECE 565 - Computer Architecture

ECE 589 - State Estimation and Parameter Identification of Stochastic Systems

ECE 595 - Selected Topics in Electrical Engineering

ECET 101 - Electrical Circuits

ECET 107 - Introduction to Circuit Analysis

ECET 111 - Digital Circuits

ECET 114 - Introduction to Microcomputers

ECET 146 - Digital Circuits II

ECET 152 - Electrical Circuits II

ECET 157 - Electronics Circuit Analysis

ECET 161 - Analog Electronics

ECET 204 - Analog Electronics II

ECET 205 - Introduction to Microprocessors

ECET 207 - AC Electronics Circuit Analysis

ECET 209 - Introduction to Microcontrollers

ECET 211 - Electrical Machines and Controls

ECET 215 - Introduction to Industrial Electronics

ECET 231 - Electrical Power and Controls

ECET 234 - PC Systems I

ECET 264 - C Programming Language Applications

ECET 291 - Industrial Practice I

ECET 292 - Industrial Practice II

ECET 295 - Industrial Practicum

ECET 296 - Electronic System Fabrication

ECET 298 - Practicum in Music Technology

ECET 299 - Selected Electrical Engineering Technology Subject

ECET 302 - Introduction to Control Systems

ECET 303 - Communications I

ECET 305 - Advanced Microprocessors

ECET 307 - Analog Network Signal Processing

ECET 312 - Power Electronics

ECET 331 - Generation and Transmission of Electrical Power

ECET 346 - Advanced Digital Circuits

ECET 348 - Project Design Analysis

ECET 355 - Data Communications and Networking

ECET 357 - Real-Time Digital Signal Processing

ECET 361 - Introduction to PLC and Pneumatic Systems

ECET 365 - Electrical Measurements

ECET 368 - Linear Integrated Circuits

ECET 372 - Process Control

ECET 375 - Computer Controlled System Designs

ECET 377 - Introduction to Fiber Optics

ECET 382 - C++ Object Oriented Programming for Industrial Applications

ECET 393 - Industrial Practice III

ECET 394 - Industrial Practice IV

ECET 395 - Industrial Practice V

ECET 403 - Communications II

ECET 411 - Microcomputer Interfacing

ECET 414 - Wireless Communications

ECET 434 - PC Systems II

ECET 435 - Electronic Industrial Controls

ECET 448 - Project Design Synthesis

ECET 453 - Topics in Telecommunications

ECET 454 - Microprocessors

ECET 466 - Windows Programming for Industrial Applications

ECET 468 - Microwave Solid State Devices

ECET 470 - Technology Project Management

ECET 472 - Automatic Control Systems

ECET 473 - Microwaves

ECET 486 - Robotics and Control Electronics with Microcomputers

ECET 490 - Senior Design Project, Phase I

ECET 491 - Senior Design Project, Phase II

ECET 492 - Digital Systems

ECET 498 - Practicum in Music Technology II

ECET 499 - Electrical Engineering Technology

ECET 581 - Workshop in Electrical and Computer Engineering Technology

ECET 590 - Special Problems in Electrical and Computer Engineering Technology

ECON E200 - Fundamentals of Economics

ECON E201 - Introduction to Microeconomics

ECON E202 - Introduction to Macroeconomics

ECON E270 - Introduction to Statistical Theory in Economics and Business I

ECON E306 - Undergraduate Seminar in Economics

ECON E321 - Intermediate Microeconomic Theory

ECON E322 - Intermediate Macroeconomic Theory

ECON E323 - Urban Economics

ECON E328 - Game Theory Goes to the Movies

ECON E340 - Introduction to Labor Economics

ECON E346 - Economics of Gender

ECON E350 - Money and Banking

ECON E360 - Public Finance: Survey

ECON E385 - Economics of Industry

ECON E406 - Senior Seminar

ECON E420 - History of Economic Thought

ECON E430 - Introduction to International Economics

ECON E445 - Collective Bargaining: Practice and Problems

ECON E446 - Public Policy in Labor Relations

ECON E472 - Introduction to Econometrics

ECON S103 - Introduction to Microeconomics-Honors

ECON S103 - Introduction to Microeconomics-Honors (Honors Course)

EDUA F300 - Topical Exploration in Education

EDUA F400 - Topical Exploration in Education

EDUA G250 - Life Skills for Personal and Interpersonal Development

EDUC E317 - Practicum in Early Childhood Education

EDUC E325 - Social Studies in the Elementary Schools

EDUC E328 - Science in the Elementary Schools

EDUC E330 - Infant Learning Environments

EDUC E333 - Inquiry in Mathematics and Science

EDUC E335 - Introduction to Early Childhood Education

EDUC E336 - Play as Development

EDUC E337 - Classroom Learning Environments

EDUC E338 - The Early Childhood Educator

EDUC E339 - Methods of Teaching Language Arts

EDUC E340 - Methods of Teaching Reading I

EDUC E341 - Methods of Teaching Reading II

EDUC E346 - Discipline/Parenting for Young Children

EDUC E347 - Language Arts for Early Childhood

EDUC E370 - Language Arts & Reading I

EDUC E371 - Language Arts and Reading II

EDUC E490 - Research in Elementary Education

EDUC F400 - Honors Seminar

EDUC H340 - Education and American Culture

EDUC K201 - Schools, Society, and Exceptionality

EDUC K205 - Introduction to Exceptional Children

EDUC K206 - Teaching Methods for Students with Special Needs

EDUC K305 - Teaching the Exceptional Learner in the Elementary School

EDUC K306 - Teaching Students with Special Needs in Secondary Classrooms

EDUC K307 - Methods for Teaching Students with Special Needs

EDUC K350 - Introduction to Mental Retardation

EDUC K351 - Vocational Assessment and Instruction for Special Needs Secondary Students

EDUC K352 - Education of Children with Learning Problems (LD and EMR)

EDUC K360 - Behavioral Characteristics of the Mentally Retarded

EDUC K370 - Introduction to Learning Disabilities

EDUC K371 - Assessment and Individualized Instruction in Reading and Mathematics

EDUC K400 - Computers for Students with Disabilities

EDUC K410 - Trends and Issues in Special Education

EDUC K441 - Transition Across the Lifespan

EDUC K453 - Management of Academic and Social Behavior

EDUC K465 - Service Delivery Systems and Consultation Strategies

EDUC M101 - Laboratory/Field Experience

EDUC M201 - Laboratory/Field Experience

EDUC M301 - Laboratory/Field Experience

EDUC M323 - The Teaching of Music in the Elementary Schools

EDUC M330 - Foundations of Art Education and Methods I

EDUC M333 - Art Experiences for the Elementary Teacher

EDUC M401 - Laboratory/Field Experience

EDUC M425 - Student Teaching: Elementary

EDUC M430 - Foundations of Art Education and Methods II

EDUC M443 - Methods of Teaching High School Social Studies

EDUC M445 - Methods of Teaching Foreign Languages

EDUC M447 - Methods of Teaching High School English

EDUC M448 - Methods of Teaching High School Mathematics

EDUC M449 - Methods of Teaching Science in the Secondary Schools

EDUC M470 - Practicum

EDUC M474 - Undergraduate Seminar in Music Education

EDUC M478 - Methods of Teaching High School Speech

EDUC M480 - Student Teaching in the Secondary School

EDUC M482 - Student Teaching: All Grades

EDUC M501 - Lab/Field Experience

EDUC N343 - Mathematics in the Elementary School

EDUC P249 - Growth and Development in Early Childhood

EDUC P250 - General Educational Psychology

EDUC P251 - Educational Psychology for Elementary Teachers

EDUC P252 - Educational Psychology for Junior High/Middle School Teachers

EDUC P253 - Educational Psychology for Secondary Teachers

EDUC P254 - Educational Psychology for Teachers of All Grades

EDUC Q200 - Introduction to Scientific Inquiry

EDUC Q400 - Man and Environment: Instructional Methods

EDUC S405 - The Middle and Junior High School

EDUC S490 - Research in Secondary Education

EDUC W200 - Using Computers for Education

EDUC W210 - Introduction to Computer- Based Education

EDUC W310 - Computer-Based Teaching Methods

EDUC W410 - Practicum in Computer- Based Education

EDUC X210 - Career Planning

EDUC X401 - Critical Reading in the Content Area

ENG G104 - Language Awareness

ENG G205 - Introduction to the English Language

ENG G206 - Introduction to the Study of Grammar

ENG G301 - History of the English Language

ENG G302 - Structure of Modern English (TESOL)

ENG G310 - Social Speech Patterns

ENG G405 - Studies in English Language

ENG G432 - Second Language Acquisition

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

ENG L102 - Western World Masterpieces II: Renaissance to Modern

ENG L103 - Introduction to Drama

ENG L104 - Introduction to Fiction

ENG L106 - Introduction to Poetry

ENG L107 - Masterpieces of Asia

ENG L108 - Introduction to Contemporary Literature

ENG L113 - Introduction to African Literature

ENG L150 - Representative American Writers

ENG L202 - Literary Interpretation

ENG L207 - Women and Literature

ENG L220 - Introduction to Shakespeare

ENG L230 - Introduction to Science Fiction

ENG L232 - Topics in Literature and Culture

ENG L250 - American Literature Before 1865

ENG L251 - American Literature Since 1865

ENG L301 - Critical and Historical Survey of English Literature I

ENG L302 - Critical and Historical Survey of English Literature II

ENG L304 - Old English Language and Literature

ENG L305 - Chaucer

ENG L306 - Middle English Literature

ENG L308 - Elizabethan Drama and Its Background

ENG L309 - Elizabethan Poetry

ENG L315 - Major Plays of Shakespeare

ENG L317 - English Poetry of the Early 17th Century

ENG L318 - Milton

ENG L322 - English Literature, 1660-1789

ENG L332 - Romantic Literature

ENG L335 - Victorian Literature

ENG L345 - 20th Century British Poetry

ENG L346 - 20th Century British Fiction

ENG L347 - British Fiction to 1800

ENG L348 - 19th Century British Fiction

ENG L351 - American Literature 1800-1865

ENG L352 - American Literature 1865-1914

ENG L354 - American Literature Since 1914

ENG L355 - American Fiction to 1900

ENG L357 - 20th Century American Poetry

ENG L358 - 20th Century American Fiction

ENG L362 - Modern Drama

ENG L364 - Native American Literature

ENG L366 - Modern Drama: English, Irish, American, and Post-Colonial

ENG L369 - Studies in British and American Authors

ENG L371 - Introduction to Criticism

ENG L372 - Contemporary American Fiction

ENG L378 - Studies in Women and Literature

ENG L379 - American Ethnic and Minority Literature

ENG L381 - Recent Writing

ENG L388 - Studies in Irish Literature and Culture

ENG L390 - Children's Literature

ENG L391 - Literature for Young Adults

ENG L392 - Topics in Children's Literature

ENG L399 - Junior Seminar

ENG L495 - Individual Reading in English

ENG L499 - Senior Independent Study for Honors Students

ENG R150 - Reading/Learning Techniques I

ENG R151 - Reading/Learning Techniques II

ENG R152 - Reading/Learning Techniques III

ENG R185 - Developmental Reading: Speed Reading

ENG S101 - Honors Western World Masterpieces I: Ancient to Renaissance

ENG S104 - Honors Introduction to Fiction

ENG S108 - Honors Introduction to Contemporary Literature

ENG S203 - Honors Creative Writing

ENG S233 - Honors Intermediate Expository Writing

ENG S233 - Honors Intermediate Expository Writing

ENG S234 - Honors Technical Writing

ENG S331 - Honors Business and Administrative Writing

ENG S390 - Honors Children's Literature

ENG S462 - Honors Studies in Rhetoric and Composition

ENG W103 - Introductory Creative Writing

ENG W115 - Basic English Composition I

ENG W116 - Basic English Composition II

ENG W129 - Introductory Elementary Composition

ENG W131 - Elementary Composition I

ENG W140 - Elementary Composition, Honors

ENG W203 - Creative Writing

ENG W232 - Introduction to Business Writing

ENG W233 - Intermediate Expository Writing

ENG W234 - Technical Report Writing

ENG W235 - Introduction to Web Authoring

ENG W301 - Writing Fiction

ENG W303 - Writing Poetry

ENG W310 - Language and the Study of Writing

ENG W331 - Business and Administrative Writing

ENG W350 - Advanced Expository Writing

ENG W364 - Publications Management

ENG W365 - Theories and Practices of Editing

ENG W367 - Writing for Multiple Media

ENG W372 - Composing the Self

ENG W376 - Writers Reading

ENG W395 - Individual Study of Writing

ENG W397 - Writing Center Theory and Practice

ENG W398 - Internship in Writing

ENG W400 - Issues in Teaching Writing

ENG W401 - Advanced Fiction Writing

ENG W403 - Advanced Poetry Writing

ENG W405 - Writing Prose - Nonfiction

ENG W420 - Argumentative Writing

ENG W421 - Technical Writing Projects

ENG W425 - Research Methods for Professional Writers

ENG W462 - Studies in Rhetoric and Composition

ENG W490 - Writing Seminar

ENGR 100 - First Year Engineering Lectures

ENGR 101 - Introduction to Engineering

ENGR 120 - Graphical Communications and Spatial Analysis

ENGR 121 - Computer Tools for Engineers

ENGR 195 - First Year Engineering Projects

ENGR 198 - Industrial Practicum

ENGR 199 - Introduction to Engineering Design

ENGR 221 - C and C++ Programming for Engineers

ENGR 222 - Object Oriented Programming

ENGR 410 - Interdisciplinary Senior Engineering Design I

ENGR 411 - Interdisciplinary Senior Engineering Design II

ENTM 206 - General Applied Entomology

ENTM 207 - General Applied Entomology Laboratory

ET 190 - Statics

ET 200 - Strength of Materials

ETCS 101 - Introduction to Engineering, Technology, and Computer Science

ETCS 106 - Introduction to Computers

FILM K101 - Introduction to Film

FILM K201 - Survey of Film History

FILM K302 - Genre Study in Film

FILM K390 - The Film and Society

FILM S302 - Genre Study in Film - Honors

FINA A170 - Women Artists/The Visual Arts

FINA A270 - Women in the History of Art

FINA A345 - American Art to 1913

FINA A348 - American Architecture

FINA A447 - Modernism and Anti- Modernism in American Art, 1900-1945.

FINA H101 - Art Appreciation

FINA H111 - Ancient and Medieval Art

FINA H112 - Renaissance Through Modern Art

FINA H311 - Art of the Ancient World

FINA H312 - Art of the Medieval World

FINA H313 - Art of the Renaissance and Baroque

FINA H314 - Art of the Modern World

FINA H390 - Topics in Art History

FINA H401 - Art Theory IV

FINA H411 - 19th Century Art I

FINA H412 - 19th Century Art II

FINA H413 - 20th-Century Art: 1900-1924

FINA H414 - 20th Century Art: 1925-Present

FINA H415 - Art of Pre-Columbian America

FINA H490 - Topics in Art History

FINA H495 - Readings and Research in Art History

FINA N108 - Introduction to Drawing for Nonmajors

FINA P121 - Drawing Fundamentals I-II

FINA P122 - Drawing Fundamentals I-II

FINA P133 - Metalsmithing Fundamentals for Non-Art Majors

FINA P151 - Design Fundamentals I-II

FINA P152 - Design Fundamentals I-II

FINA P223 - Figure Drawing I

FINA P225 - Painting Fundamentals I

FINA P226 - Painting Fundamentals II

FINA P231 - Sculpture Fundamentals

FINA P233 - Metalsmithing Fundamentals

FINA P235 - Ceramics Fundamentals

FINA P241 - Printmaking Fundamentals

FINA P321 - Advanced Drawing I

FINA P322 - Advanced Drawing II

FINA P325 - Advanced Painting I

FINA P326 - Advanced Painting II

FINA P331 - Advanced Sculpture I

FINA P332 - Advanced Sculpture II

FINA P333 - Advanced Metalsmithing I

FINA P334 - Advanced Metalsmithing II

FINA P335 - Advanced Ceramics I

FINA P336 - Advanced Ceramics II

FINA P337 - Site Specific Ceramic Artworks: The Design, Construction, and Installation of a Ceramic Artwork

FINA P341 - Advanced Printmaking I

FINA P342 - Advanced Printmaking II

FINA P390 - Topics in Studio Fine Art

FINA P421 - Advanced Drawing III

FINA P422 - Advanced Drawing IV

FINA P425 - Advanced Painting III

FINA P426 - Advanced Painting IV

FINA P431 - Advanced Sculpture III

FINA P432 - Advanced Sculpture IV

FINA P433 - Advanced Metalsmithing III

FINA P434 - Advanced Metalsmithing IV

FINA P435 - Advanced Ceramics III

FINA P436 - Advanced Ceramics IV

FINA P441 - Advanced Printmaking III

FINA P442 - Advanced Printmaking IV

FINA P450 - Senior Project

FINA P490 - Topics in Studio Fine Arts

FINA P495 - Independent Study in Fine Arts

FINA S105 - Introduction to Design

FINA S165 - Ceramics for Nonmajors

FINA S462 - B.F.A. Ceramics: Clay Body and Glaze Preparation

FINA T255 - Crafts and Design

FNN 106 - Profession of Dietetics

FNN 203 - Foods Selection and Preparation

FNN 204 - Food, History & Culture

FNN 302 - Nutrition Education

FNN 303 - Essentials of Nutrition

FNN 304 - Nutrition's Place in Hospitality

FNN 403 - Advanced Nutrition: Food from Farm to Fork

FNR 103 - Introduction to Environmental Conservation

FNR 505 - Molecular Ecology and Evolution

FNR 523 - Aquaculture

FOLK F101 - Introduction to Folklore

FOLK F111 - Introduction to World Folk Music

FOLK F131 - Introduction to Folklore in the United States

FOLK F205 - Folklore in Video and Film

FOLK F220 - Introduction to American Folklore

FOLK F230 - Music in Social Movements

FOLK F251 - Folklore Methods and Theories

FOLK F252 - Folklore and the Humanities

FOLK F254 - Social History of Rock and Roll

FOLK F305 - Asian Folklore

FOLK F310 - American Urban and Ethnic Folklore

FOLK F350 - Folklore and Women

FOLK F352 - Native American Folklore

FOLK F354 - African American Folklore/Folklife/FOLK Music

FOLK F378 - Irish Folk Culture

FOLK F391 - Indiana Folklife

FOLK F400 - Individual Study in Folklore

FOLK F404 - Topics in Folklore

FOLK F425 - Folklore in Its Literary Relationships

FOLK F430 - Advanced Study of Folklore and Related Disciplines

FOLK F465 - Ballads and Folksongs

FOLK F487 - The Folk Roots of American Popular Music

FREN F111 - Elementary French I

FREN F112 - Elementary French II

FREN F113 - Accelerated First Year French

FREN F203 - Second-Year French I

FREN F204 - Second-Year French II

FREN F213 - Second-Year French Composition

FREN F305 - Chefs-D'Oeuvre de la Litterature Francaise I

FREN F306 - Chefs-D'Oeuvre de la Litterature Francaise II

FREN F310 - Topics in French Literature in Translation

FREN F315 - Phonetics

FREN F317 - French Language Skills I

FREN F318 - French Language Skills II

FREN F325 - Oral French for Teachers

FREN F326 - French in the Business World

FREN F329 - Phonetics and Pronunciation

FREN F330 - Introduction to Translating French and English

FREN F340 - Introduction to Contemporary French Society

FREN F356 - Introduction to French Cinema

FREN F408 - Women in French Literature

FREN F410 - French Literature of the Middle Ages

FREN F413 - The French Renaissance

FREN F423 - Tragedie Classique

FREN F424 - Comedie Classique

FREN F425 - Prose et Poesie du Dix- Septieme Siecle

FREN F440 - Medieval and Renaissance French Literature

FREN F442 - La Poesie Francaise et Francophone

FREN F443 - 19th Century Novel I

FREN F444 - 19th Century Novel II

FREN F446 - Poesie du Dix-Neuvieme Siecle

FREN F450 - Colloquium in French Studies

FREN F453 - Litterature Contemporaine I

FREN F454 - Litterature Contemporaine II

FREN F459 - L'Autobiographie

FREN F460 - French Fiction in Film

FREN F463 - Civilisation Francaise I

FREN F464 - Civilisation Francaise II

FREN F474 - Theme ET Version

FREN F495 - Individual Reading in French Literature

FREN F498 - Foreign Study in France

FREN W399 - Internship in Modern Foreign Language

FWAS H201 - Humanities I: The Ancient World

FWAS H202 - Humanities II: Foundations of the Modern Western World

GEOG G107 - Physical Systems of the Environment

GEOG G109 - Weather and Climate

GEOG G237 - Cartography and Geographic Information

GEOG G315 - Environmental Conservation

GEOL G100 - General Geology

GEOL G103 - Earth Science: Materials and Processes

GEOL G104 - Earth Science: Evolution of the Earth

GEOL G108 - Selected Earth Science Topics

GEOL G113 - Directed Study in Earth Science

GEOL G210 - Oceanography

GEOL G211 - Introduction to Paleobiology

GEOL G221 - Introductory Mineralogy

GEOL G222 - Introduction to Petrology

GEOL G300 - Environmental and Urban Geology

GEOL G305 - Geologic Fundamentals in Earth Science

GEOL G319 - Elementary Field Geology

GEOL G323 - Structural Geology

GEOL G334 - Principles of Sedimentology and Stratigraphy

GEOL G406 - Introduction to Geochemistry

GEOL G410 - Undergraduate Research in Geology

GEOL G411 - Invertebrate Paleontology

GEOL G412 - Introduction to Vertebrate Paleontology

GEOL G415 - Geomorphology

GEOL G420 - Regional Geology Field Trip

GEOL G425 - Scanning Electron Microscopy

GEOL G427 - Introduction to X-ray Mineralogy

GEOL G429 - Field Geology in the Rocky Mountains

GEOL G451 - Principles of Hydrogeology

GEOL G490 - Undergraduate Seminar

GEOL G499 - Honors Research in Geology Max.

GEOL L100 - General Geology Laboratory

GEOL S100 - General Geology

GEOL S100 - General Geology (Honors)

GEOL S104 - Honors Earth Science: Evolution of the Earth

GEOL S222 - Honors Introduction to Petrology

GEOL S305 - Honors Fundamentals in Earth Science

GEOL S305 - Honors Fundamentals in Earth Science (Honors Course)

GER G111 - Elementary German I

GER G112 - Elementary German II

GER G113 - First-Year German in One Semester

GER G203 - Second-Year German I

GER G204 - Second-Year German II

GER G305 - Introduction to German Literature: Types

GER G306 - Introduction to German Literature: Themes

GER G307 - Selected Works of Contemporary German Literature

GER G315 - Business German

GER G318 - German Language Skills I

GER G319 - German Language Skills II

GER G325 - German for Teachers

GER G362 - Introduction to Contemporary Germany

GER G363 - Deutsche Kulturgeschichte

GER G404 - Deutsche Literatur: Seit Der Romantik

GER G405 - Goethe: Life and Works

GER G411 - Advanced German: Grammar

GER G412 - Advanced German: Composition

GER G415 - Perspectives on German Literature

GER G418 - German Film and Popluar Culture

GER G422 - 19th Century German Literature

GER G425 - 20th Century German Literature

GER G452 - Senior Seminar

GER G463 - German Culture

GER G464 - Kultur Und Gesellschaft

GER G470 - German Folklore

GER G495 - Individual Readings in Germanic Literatures

GER W399 - Internship in Modern Foreign Languages

GERN G231 - Introduction to Gerontology

GERN G399 - Independent Study in Gerontology

GERN G494 - Gerontology Practicum

GERN G499 - Topics in Gerontology

HIST A301 - Colonial America

HIST A302 - Revolutionary America

HIST A303 - The United States from 1789 to 1865 I

HIST A304 - The United States from 1789 to 1865 II

HIST A306 - Sex Roles and Society in American History

HIST A308 - American Business History

HIST A309 - The South Before the Civil War

HIST A310 - Survey of American Indians I

HIST A311 - Survey of American Indians II

HIST A313 - Origins of Modern America

HIST A314 - Recent U.S. History I, 1917-1945

HIST A315 - Recent U.S. History II, 1945-Present

HIST A318 - The American West

HIST A321 - History of American Thought I

HIST A322 - History of American Thought II

HIST A345 - American Diplomatic History I

HIST A346 - American Diplomatic History II

HIST A349 - Afro-American History

HIST A351 - The United States in World War II

HIST A382 - The Sixties

HIST B351 - Western Europe in the Early Middle Ages

HIST B352 - Western Europe in the High/Late Middle Ages

HIST B355 - Europe: Louis XIV to French Revolution

HIST B361 - Europe in the 20th Century I

HIST B378 - History of Germany II

HIST C386 - Greek History

HIST C388 - Roman History

HIST C390 - The Decline and Fall of the Roman Empire

HIST C392 - History of Modern Near East

HIST C393 - Ottoman History

HIST D402 - Byzantine History and Civilization II

HIST D410 - Russian Revolutions and the Soviet Regime

HIST D426 - History of Balkans: 1914 to Present

HIST E331 - African History from Ancient Times to Empires and City States

HIST E332 - African History from Colonial Rule to Independence

HIST E336 - History of East Africa

HIST F341 - Latin America: Conquest and Empire

HIST F342 - Latin America: Evolution and Revolution

HIST F346 - Modern Mexico

HIST F416 - History of Slavery in the Americas

HIST F431 - 19th Century Latin American Intellectual History

HIST F432 - 20th Century Latin American Revolutions

HIST F447 - U.S.-Latin American Relations

HIST H105 - American History I

HIST H106 - American History II

HIST H113 - History of Western Civilization I

HIST H114 - History of Western Civilization II

HIST H201 - Russian Civilization I-II

HIST H202 - Russian Civilization I-II

HIST H205 - Ancient Civilization

HIST H217 - The Nature of History

HIST H222 - Renaissance and Reformation Europe

HIST H225 - Special Topics in History

HIST H228 - The Vietnam War

HIST H232 - The World in the 20th Century

HIST H260 - History of Women in the United States

HIST H496 - Internship in History

HIST J495 - Proseminar for History Majors

HIST K499 - Senior Honors Thesis

HIST S105 - American History Honors To 1877

HIST S105 - American History Honors To 1877 (Honors Course)

HIST S106 - American History Honors Since 1877

HIST S106 - American History Honors Since 1877 (Honors Course)

HIST S113 - Honors History of Western Europe I

HIST S113 - Honors History of Western Europe I (Honors Course)

HIST S114 - Honors History of Western Europe II

HIST S232 - The World in the 20th Century - Honors

HIST T325 - Topics in History

HIST T335 - Topics in Non-Western History

HIST T425 - Topics in History

HIST T426 - Topics in History

HIST T495 - Undergraduate Reading in History

HON H100 - Freshman Honors Seminar

HON H101 - Ideas and Human Experience

HON H150 - Honors H-Option Contract

HON H200 - Interdepartmental Colloquium - Humanities

HON H201 - Interdepartmental Colloquium - Sciences

HON H202 - Interdepartmental Colloquium - Natural and Math Sciences

HON H250 - Honors H-Option Contract

HON H300 - Interdepartmental Colloquium

HON H301 - Interdepartmental Colloquium

HON H302 - Interdepartmental Colloquium

HON H350 - Honors H-Option Contract

HON H399 - Honors Independent Study

HON H450 - Honors H-Option Contract

HORT 101 - Fundamentals of Horticulture

HPER A361 - Coaching of Football

HPER A362 - Coaching of Basketball

HPER A363 - Coaching of Baseball

HPER A364 - Coaching of Track and Field

HPER A370 - Coaching of Soccer

HPER A371 - Coaching of Volleyball

HPER A383 - Therapeutic Management of Sports Injuries

HPER A480 - Care and Prevention of Athletic Injuries

HPER A483 - Principles of Sports Officiating

HPER A484 - Inter-Scholastic Athletic Programs

HPER E105 - Badminton

HPER E111 - Basketball

HPER E113 - Billiards

HPER E117 - Bowling

HPER E119 - Conditioning

HPER E133 - Fitness and Jogging I

HPER E135 - Golf

HPER E139 - Handball

HPER E148 - T'ai Chi Ch'uan

HPER E150 - Karate

HPER E151 - Self-Defense

HPER E155 - Modern Dance

HPER E159 - Racquetball

HPER E165 - Soccer

HPER E168 - Swimming for Nonswimmers

HPER E181 - Tennis

HPER E185 - Volleyball

HPER E186 - Wall Volleyball

HPER E190 - Yoga I

HPER E211 - Advanced Basketball

HPER E217 - Bowling - Intermediate

HPER E233 - Fitness and Jogging II

HPER E250 - Karate - Intermediate

HPER E255 - Modern Dance - Intermediate

HPER E259 - Racquetball - Intermediate

HPER E268 - Swimming - Intermediate

HPER E281 - Tennis - Intermediate

HPER E285 - Advanced Volleyball

HPER E290 - Yoga II

HPER H160 - First Aid

HPER H163 - Topics in Health

HPER P122 - Performance of Team Sports

HPER P240 - Foundations of Physical Education

HPER P280 - Principles of Athletic Training and Emergency Care

HPER P397 - Kinesiology

HPER P409 - Physiology of Exercise

HPER P450 - Principles and Psychology of Coaching

HPER R160 - Man, His Leisure, and Recreation

HPER R180 - Recreation Leadership

HPER R399 - Practicum in Parks and Recreation

HSC 100 - Introduction to Health Professions

HSC 499 - Special Topics in Health Sciences

HSRV 100 - Introduction to Human Services

HSRV 103 - Helping Relationship Techniques

HSRV 105 - Basic Interviewing Skills

HSRV 169 - Introduction to Wellness and Stress Management

HSRV 200 - Behavioral Therapies

HSRV 201 - Clinical in Case Study Method I

HSRV 211 - The Dynamics of Group Behavior

HSRV 251 - Clinical in Case Study Method II

HSRV 299 - Human Services

HSRV 315 - Introduction to Theories and Therapies

HSRV 320 - Case Methods

HSRV 325 - Current Trends in Psychosocial Rehabilitation

HSRV 330 - Psychopharmacology for Human Services

HSRV 350 - Drugs and Society

HSRV 399 - Special Topics

HSRV 400 - Internship I

HSRV 401 - Internship Seminar I

HSRV 420 - Substance Abuse Prevention

HSRV 450 - Internship II

HSRV 451 - Internship Seminar II

HTM 100 - Introduction to the Hospitality and Tourism Industry

HTM 141 - Financial Accounting for the Service Industries

HTM 181 - Lodging Management

HTM 191 - Sanitation and Health in Foodservice, Lodging, and Tourism

HTM 212 - Organization and Management in the Hospitality and Tourism Industry

HTM 231 - Hospitality and Tourism Marketing

HTM 251 - Computers in the Hospitality Industry

HTM 291 - Quantity Food Production and Service

HTM 291L - Quantity Food Production and Service Labs

HTM 301 - Hospitality and Tourism Industry Practicum

HTM 302 - Hospitality and Tourism Industry Internship

HTM 310 - Food and Beverage Operation Management

HTM 311 - Procurement Management for Foodservice

HTM 312 - Human Resources Management for the Service Industries

HTM 314 - Franchising

HTM 315 - Club Management and Operations

HTM 316 - Casino Management

HTM 321 - Equipment for Restaurants, Hotels, and Institutions

HTM 322 - Hospitality Facilities Management

HTM 323 - Foodservice Layout and Design

HTM 341 - Cost Controls in Foodservice and Lodging

HTM 371 - Introduction to Tourism

HTM 383 - Resort, Cruise, and Entertainment Operations

HTM 391 - Specialty Foodservice and Catering

HTM 410 - Dinner Series, Capstone

HTM 411 - Hospitality and Tourism Law

HTM 420 - Event Management

HTM 430 - Hospitality Strategic Management

HTM 441 - Financial Management for the Hospitality Industry

HTM 491 - Beverage Management

HTM 492 - Advanced Foodservice Management

IDIS G102 - Freshman Seminar/Physical and Natural World

IDIS G103 - Freshman Seminar/The Individual, Culture, and Society

IDIS G104 - Freshman Seminar/ Humanistic Thought

IDIS 100 - Freshman Honors Seminar

IDIS 110 - Freshman Success Course

IDIS 111 - International Student Success

IDIS 115 - Career Beginnings

IDIS 199 - Freshman Learning Community

IDIS 200 - Interdepartmental Colloquium

IDIS 299 - Honors Tutorial

IDIS 299 - Honors Tutorial (Honors Course)

IDIS 300 - Interdepartmental Colloquium

IDIS 300 - Interdepartmental Colloquium

IDIS 399 - Honors Independent Study

IDIS 399 - Honors Independent Study (Honors Course)

IET 105 - Industrial Management

IET 204 - Techniques of Maintaining Quality

IET 224 - Production Planning and Control

IET 257 - Ergonomics

IET 267 - Work Methods Design

IET 274 - Industrial Practice I

IET 275 - Industrial Practice II

IET 299 - Industrial Engineering Technology

IET 304 - Advanced Metrology

IET 310 - Plant Layout and Material Handling

IET 350 - Engineering Economy

IET 362 - Technological Optimization

IET 369 - Manufacturing Simulation

IET 375 - Industrial Practice III

IET 376 - Industrial Practice IV

IET 401 - Manufacturing Process Planning

IET 454 - Statistical Process Control

IET 475 - Industrial Practice V

IET 478 - Lean Manufacturing and Design

IET 480 - Cost Estimating and Design

IET 499 - Industrial Engineering Technology

ILCS I208 - International Cinema

ILCS I209 - From Myths to Fairy Tales: Back to the Germanic Roots in Storytelling

ILCS I300 - Methods of Research and Criticism

ILCS I330 - Cultural Crossroads: Comparative International Cultures

ILCS I350 - International Communication

IM 105 - Introduction to Informatics

IM 210 - Problem Solving and Programming for Informatics

IM 220 - Database Applications for Informatics

IM 230 - Informatics Infrastructure

IM 310 - Problem Solving and Programming for Informatics

IM 330 - Information Retrieval and Presentation

IM 370 - Network Design and Management for Informatics

IM 380 - HCI Design for Informatics

IM 450 - Informatics Design Project

INTL I200 - Introduction to International Studies: Emerging Global Visions

INTL I441 - America in Global Perspective

INTR 111 - Introduction to Interior Design

INTR 112 - Residential Interior Design II

INTR 121 - Freehand Sketching

INTR 123 - Perspective Drawing

INTR 131 - Decorative Materials and Accessories I

INTR 132 - Decorative Materials and Accessories II

INTR 201 - CAD for Interior Design

INTR 206 - Portfolio and Professional Presentation

INTR 220 - Architecture and Urban Form

INTR 220 - Architecture and Urban Form (Honors Course)

INTR 241 - Lighting and Color Design

INTR 299 - Interior Design

INTR 306 - Interior and Furniture Styles I

INTR 307 - Interior and Furniture Styles II

INTR 308 - Contract Interior Design I

INTR 309 - Contract Interior Design II

INTR 310 - Interior Design Travel

INTR 320 - Architecture and Urban Form in the Modern World

INTR 330 - Culture and Design: A Cross-Culture Comparison of Architecture

INTR 400 - Interior Design Studio I

INTR 401 - Interior Design Studio II

INTR 402 - Professional Practice

INTR 403 - Interior Design Details

INTR 404 - Interior Design Practicum

INTR 499 - Interior Design Projects

IST 140 - Introduction to Visual Basic Applications

IST 155 - COBOL Programming

IST 203 - Advanced Visual Basic

IST 256 - Applications Software Project

IST 280 - Survey of Information Technology

IST 292 - Intermediate Topics in Computer Science

IST 295 - Industrial Practicum

IST 366 - Structured Analysis Techniques

IST 367 - Structured Design Techniques

IST 395 - Industrial Practice I

IST 466 - Strategic Issues for Information Systems

IST 467 - Project Management

IST 492 - Topics in Computer Science

IST 494 - Directed Study

IST 495 - Cooperative Experience

IT 507 - Measurement and Evaluation in Industry and Technology

IT 508 - Quality and Productivity in Industry and Technology

IT 590 - Special Problems in Industrial Technology

ITC 110 - Information Technology Fundamentals

ITC 130 - Programming Fundamentals I

ITC 131 - Programming Fundamentals II

ITC 145 - Electrical Fundamentals

ITC 170 - Discrete Computing Structures

ITC 210 - Information Technology Systems

ITC 220 - Computer Systems

ITC 230 - Computer Operating Systems

ITC 250 - Web Systems

ITC 330 - Networking

ITC 350 - Databases

ITC 370 - Human Computer Interaction

ITC 380 - Project Integration

ITC 410 - Information Assurance & Security

ITC 480 - Information Technology Senior Project I

ITC 481 - Information Technology Senior Project II

JOUR C200 - Mass Communications

JOUR C201 - Topics in Journalism

JOUR C300 - Citizen and the News

JOUR C327 - Writing for Publication

JOUR J110 - Foundations of Journalism and Mass Communication

JOUR J200 - Reporting, Writing and Editing I

JOUR J201 - Reporting, Writing, and Editing II

JOUR J210 - Visual Communication

JOUR J219 - Introduction to Public Relations

JOUR J280 - Sophomore Seminar in Journalism

JOUR J290 - Internship in Journalism

JOUR J300 - Communications Law

JOUR J310 - Editorial Practices

JOUR J315 - Feature Writing

JOUR J320 - Principles of Creative Advertising

JOUR J321 - Principles of Public Relations

JOUR J337 - Media Economics

JOUR J351 - Newspaper Editing

JOUR J360 - Journalism Specialties

JOUR J390 - Corporate Publications

JOUR J413 - Magazine Article Writing

JOUR J425 - Supervision of School Media

JOUR J427 - Public Relations in a Democratic Society

JOUR J492 - Media Internship

LING L103 - Introduction to the Study of Language

LING L303 - Introduction to Linguistic Analysis

LING L307 - Phonology

LING L310 - Syntax

LING L321 - Methods and Materials for TESOL I

LING L322 - Methods and Materials for TESOL II

LING L325 - Semantics

LING L360 - Language in Society

LING L366 - Linguistics and Adjacent Arts and Sciences

LING L430 - Language Change and Variation

LING L431 - Field Methods

LING L470 - TENL Practicum

LING L485 - Topics in Linguistics

LING L490 - Linguistic Structures

LING S103 - Honors Introduction to the Study of Language

LSTU L100 - Survey of Unions and Collective Bargaining

LSTU L101 - American Labor History

LSTU L104 - Introduction to the Study of Labor History

LSTU L110 - Introduction to Labor Studies: Labor and Society

LSTU L190 - The Labor Studies Degree

LSTU L199 - Portfolio Development Workshop

LSTU L200 - Survey of Employment Law

LSTU L201 - Labor Law

LSTU L203 - Labor and the Political System

LSTU L205 - Contemporary Labor Problems

LSTU L210 - Workplace Discrimination and Fair Employment

LSTU L220 - Grievance Representation

LSTU L230 - Labor and the Economy

LSTU L240 - Occupational Health and Safety

LSTU L250 - Collective Bargaining

LSTU L251 - Collective Bargaining Laboratory

LSTU L255 - Unions in State and Local Government

LSTU L260 - Leadership and Representation

LSTU L270 - Union Government and Organization

LSTU L280 - Union Organizing

LSTU L285 - Assessment Project

LSTU L290 - Topics in Labor Studies

LSTU L299 - Self-Acquired Competencies, Labor Studies

LSTU L315 - The Organization of Work

LSTU L320 - Grievance Arbitration

LSTU L350 - Issues in Collective Bargaining

LSTU L360 - Union Administration and Development

LSTU L375 - Comparative Labor Movements

LSTU L380 - Theories of the Labor Movement

LSTU L385 - Class, Race, Gender, and Work

LSTU L390 - Topics in Labor Studies

LSTU L420 - Labor Studies Internship

LSTU L430 - Labor Research Methods

LSTU L480 - Seminar on Labor Education

LSTU L490 - Topics in Labor Studies

LSTU L495 - Directed Labor Study

LSTU L499 - Self-Acquired Competencies, Labor Studies

MA 009 - Topics In Elementary Algebra

MA 013 - Topics in Intermediate Algebra

MA 101 - Mathematics for Elementary Teachers I

MA 102 - Mathematics for Elementary Teachers II

MA 103 - Mathematics for Elementary Teachers III

MA 109 - Elementary Algebra

MA 113 - Intermediate Algebra

MA 149 - Basic and College Algebra

MA 153 - Algebra and Trigonometry I

MA 154 - Algebra and Trigonometry II

MA 159 - Precalculus

MA 163H - Honors Integrated Calculus and Analytic Geometry I (Honors Course)

MA 164H - Honors Integrated Calculus and Analytic Geometry II (Honors Course)

MA 165 - Analytic Geometry and Calculus I

MA 166 - Analytic Geometry and Calculus II

MA 168 - Mathematics for the Liberal Arts Student

MA 175 - Introductory Discrete Mathematics

MA 183 - Professional Practicum I

MA 184 - Professional Practicum II

MA 213 - Finite Mathematics I

MA 227 - Calculus for Technology I

MA 228 - Calculus for Technology II

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

MA 261 - Multivariate Calculus

MA 263 - Multivariate and Vector Calculus

MA 275 - Intermediate Discrete Math

MA 284 - Professional Practicum III

MA 305 - Foundations of Higher Mathematics

MA 314 - Introduction to Mathematical Modeling

MA 321 - Applied Differential Equations

MA 351 - Elementary Linear Algebra

MA 363 - Differential Equations

MA 386 - Professional Practicum IV

MA 417 - Mathematical Programming

MA 418 - Computations Laboratory for MA 417

MA 441 - Real Analysis

MA 453 - Elements of Algebra

MA 460 - Geometry

MA 487 - Professional Practicum V

MA 490 - Topics in Mathematics for Undergraduates

MA 510 - Vector Calculus

MA 511 - Linear Algebra with Applications

MA 521 - Introduction to Optimization Problems

MA 523 - Introduction to Partial Differential Equations

MA 525 - Introduction to Complex Analysis

MA 540 - Analysis I

MA 541 - Analysis II

MA 553 - Introduction to Abstract Algebra

MA 554 - Linear Algebra

MA 556 - Introduction to the Theory of Numbers

MA 560 - Fundamental Concepts of Geometry

MA 571 - Elementary Topology

MA 575 - Graph Theory

MA 580 - History of Mathematics

MA 581 - Introduction to Logic for Teachers

MA 598 - Topics in Mathematics

ME 200 - Thermodynamics I

ME 250 - Statics

ME 251 - Dynamics

ME 252 - Strength of Materials

ME 253 - Statics and Dynamics

ME 282 - Measurements and Instrumentation

ME 285 - Industrial Practice I

ME 286 - Industrial Practice II

ME 287 - Industrial Practice III

ME 288 - Industrial Practice IV

ME 289 - Industrial Practice V

ME 293 - Measurements and Instrumentation

ME 301 - Thermodynamics II

ME 303 - Material Science and Engineering

ME 304 - Mechanics and Materials Laboratory

ME 318 - Fluid Mechanics

ME 319 - Fluid Mechanics Laboratory

ME 321 - Heat Transfer

ME 322 - Heat Transfer Laboratory

ME 361 - Kinematics and Dynamics of Machinery

ME 369 - Design of Machine Elements

ME 371 - System Dynamics and Introduction to Control

ME 373 - Numerical Methods for Engineers

ME 387 - Electronics and System Engineering through Robotics

ME 387 - Electronics and System Engineering through Robotics

ME 388 - Electronics and System Engineering through Robotics

ME 388 - Electronics and System Engineering through Robotics Lab

ME 421 - Heating and Air Conditioning I

ME 424 - Design and Optimization of Thermal Systems

ME 425 - Intermediate Heat Transfer: Theory and Applications

ME 453 - Experimental Stress Analysis

ME 454 - Intermediate Dynamics with Computer Applications

ME 469 - Advanced Mechanics of Materials

ME 471 - Vibration Analysis

ME 480 - Finite Element Analysis

ME 487 - Mechanical Engineering Design I

ME 488 - Mechanical Engineering Design II

ME 497 - Mechanical Engineering Projects

ME 498 - Research in Mechanical Engineering I

ME 499 - Research in Mechanical Engineering II

MET 104 - Technical Graphics Communications

MET 106 - Analytical and Computational Tools in MET

MET 180 - Materials and Processes

MET 216 - Machine Elements

MET 223 - Introduction to Computer- Aided Modeling and Design

MET 247 - Computer-Aided Tool and Fixture Design

MET 275 - Industrial Practice I

MET 276 - Industrial Practice II

MET 295 - Industrial Practicum

MET 299 - Mechanical Engineering Technology

MET 300 - Applied Thermodynamics

MET 312 - Dynamics and Mechanisms

MET 330 - Introduction to Fluid Power

MET 335 - Basic Machining

MET 347 - Programming of Automation Systems

MET 350 - Applied Fluid Mechanics

MET 360 - Heating, Ventilating, and Air Conditioning

MET 370 - Introduction to Heat Transfer

MET 375 - Industrial Practice III

MET 376 - Industrial Practice IV

MET 381 - Engineering Materials

MET 475 - Industrial Practice V

MET 487 - Instrumentation and Automatic Control

MET 494 - Senior Design and Analysis

MET 499 - Mechanical Engineering Technology

MSL 101 - Foundation Officership

MSL 102 - Basic Leadership

MSL 120 - Reading Military Maps Survival Skills

MSL 201 - Individual Leadership

MSL 202 - Leadership and Teamwork

MSL 301 - Leadership and Problem Solving

MSL 302 - Leadership and Ethics

MSL 401 - Leadership and Management

MSL 402 - Officership

MSL 490 - Directed Study In Military Science

MSL 499 - Advanced Military Studies

MUS A410 - Violin Undergraduate Major

MUS A420 - Viola Undergraduate Major

MUS B110–B410 - French Horn

MUS B120–B420 - Trumpet and Cornet

MUS B130–B430 - Trombone

MUS B140–B440 - Baritone Horn

MUS B150 - Tuba

MUS B410 - Horn Undergraduate Major

MUS B420 - Trumpet and Cornet Undergraduate Major

MUS B430 - Trombone Undergraduate Major

MUS B440 - Euphonium Undergraduate Major

MUS B450 - Tuba

MUS D100 - Percussion

MUS D400 - Percussion

MUS D700 - Percussion

MUS E193 - Piano Pedagogy I

MUS E194 - Piano Pedagogy II

MUS E253 - Functional Music Skills

MUS E293 - Piano Pedagogy III

MUS E294 - Piano Pedagogy IV

MUS E353 - Orff and Percussion Techniques for Music Therapy

MUS E400 - Undergraduate Readings in Music Education

MUS E459 - Instrumental Pedagogy

MUS E490 - Psychology of Music Teaching

MUS E493 - Piano Pedagogy

MUS E494 - Voice Pedagogy

MUS F316 - Jazz Arranging I

MUS F321 - Jazz Improvisation

MUS F419 - Special Topics

MUS G261 - String Techniques

MUS G272 - Clarinet and Saxophone Techniques

MUS G281 - Brass Instrument Techniques

MUS G337 - Woodwind Techniques

MUS G338 - Percussion Techniques

MUS G370 - Techniques for Conducting

MUS G371 - Choral Conducting I

MUS G373 - Instrumental Conducting

MUS H100 - Harp

MUS H300 - Harp

MUS K131 - Composition Workshop I

MUS K132 - Composition Workshop II

MUS K312 - Arranging for Instrumental and Vocal Groups

MUS K416 - Jazz Arranging I

MUS L100 - Guitar

MUS L153 - Introduction to Music Therapy

MUS L253 - Music Therapy Observation Practicum

MUS L254 - Music Therapy Practicum I

MUS L300 - Guitar

MUS L340 - Music Therapy in Healthcare Settings

MUS L353 - Music Therapy Practicum II

MUS L354 - Music Therapy Practicum III

MUS L410 - Administrative and Professional Issues in Music Therapy

MUS L418 - Psychology of Music

MUS L419 - Introduction to Music Therapy Research Methods

MUS L420 - Clinical Processes in Music Therapy

MUS L421 - Music Therapy Practicum IV

MUS L422 - Music Therapy Theories and Techniques

MUS L423 - Advanced Music Therapy Practicum

MUS L424 - Music Therapy Internship

MUS M201 - Music Literature I

MUS M202 - Music Literature II

MUS M216 - Music Education Lab/Field Experience

MUS M236 - Introduction to Music Education

MUS M317 - Music Education Lab/Field Experience

MUS M318 - Music Education Lab/Field Experience

MUS M319 - Music Education Lab/Field Experience

MUS M337 - Methods and Materials for Teaching Instrumental Music

MUS M338 - Methods and Materials for Teaching Choral Music

MUS M339 - General Music Methods K-8

MUS M400 - Undergraduate Readings in Musicology

MUS M403 - History of Music I

MUS M404 - History of Music II

MUS M411 - History of Music in the Americas

MUS M431 - Song Literature

MUS M443 - Survey of Keyboard Literature

MUS M445 - Instrumental Literature

MUS N101 - Music for the Listener - Honors

MUS P100 - Piano

MUS P110 - Piano Class, Non-music Majors

MUS P111 - Class Piano I

MUS P121 - Class Piano II

MUS P131 - Class Piano III

MUS P141 - Class Piano IV

MUS P210 - Keyboard Skills

MUS P211 - Keyboard Techniques

MUS P400 - Piano Undergraduate Major

MUS P800 - Piano

MUS Q100 - Organ

MUS Q300 - Organ

MUS R151 - Introduction to Musical Theatre

MUS R453 - Project in Opera Stage Direction

MUS S110 - Violin

MUS S120 - Viola

MUS S130 - Cello

MUS S140–S440 - String Bass

MUS S430 - Cello Undergraduate Major

MUS S440 - Double Bass Undergraduate Major

MUS S810 - Violin

MUS S820 - Viola

MUS S830 - Cello

MUS T109 - Rudiments of Music I

MUS T113 - Music Theory I

MUS T114 - Music Theory II

MUS T115 - Sightsinging and Aural Perception I

MUS T116 - Sightsinging and Aural Perception II

MUS T213 - Music Theory III

MUS T214 - Music Theory IV

MUS T215 - Sightsinging and Aural Perception III

MUS T216 - Sightsinging and Aural Perception IV

MUS T315 - Analysis of Musical Form

MUS T400 - Undergraduate Readings in Theory

MUS U109 - Computer Skills for Musicians

MUS U233 - Applied French Diction for Singers

MUS U243 - Applied German Diction for Singers

MUS U253 - Applied Italian Diction for Singers

MUS U354 - Introduction to Creative Arts Therapies

MUS U355 - Music and Exceptionality

MUS U356 - Creative Arts and Early Childhood

MUS U357 - Music in Special Education

MUS U361 - English Diction for Singers

MUS U410 - Creative Arts, Health, and Wellness

MUS V100 - Voice

MUS V201 - Voice Class

MUS V800 - Voice

MUS W110 - Flute and Piccolo

MUS W120 - Oboe and English Horn

MUS W130 - Clarinet

MUS W140 - Bassoon

MUS W150 - Saxophone

MUS W320 - Oboe and English Horn

MUS W410 - Flute and Piccolo

MUS W410 - Flute and Piccolo Undergraduate Major

MUS W420 - Oboe and English Horn

MUS W420 - Oboe and English Horn Undergraduate Major

MUS W430 - Clarinet Undergraduate Major

MUS W440 - Bassoon

MUS W440 - Bassoon Undergraduate Major

MUS W450 - Saxophone Undergraduate Major

MUS W710 - Flute and Piccolo

MUS W730 - Clarinet

MUS W750 - Saxophone

MUS X002 - Piano Accompanying

MUS X040 - University Instrumental Ensembles

MUS X070 - University Choral Ensembles

MUS X095 - Performance Class

MUS X296 - Applied Music Upper Divisional Jury Examination

MUS X297 - Music Education Upper Divisional Skills Examination

MUS X298 - Music Therapy Upper Divisional Skills Examination

MUS X299 - Piano Proficiency Examination

MUS X301 - Recital: Concentration Level

MUS X341 - Guitar Ensemble

MUS X401 - Junior Recital: Performance Major

MUS X402 - Senior Recital: Performance Major

MUS X420 - Brass Ensemble

MUS X425 - Early Music Chamber Ensemble

MUS X450 - String Instrument Ensembles

MUS X460 - Woodwind Ensembles

MUS X470 - Opera Ensemble

MUS X490 - Percussion Ensembles

MUS Y110 - Early Instruments, Early Voice

MUS Z101 - Music for the Listener

MUS Z102 - Music for the Listener

MUS Z105 - Traditions in World Music

MUS Z140 - Introduction to Musical Expression

MUS Z201 - History of Rock and Roll Music

MUS Z241 - Introduction to Music Fundamentals

MUS Z393 - History of Jazz

NELC A100 - Elementary Arabic I

NELC A150 - Elementary Arabic II

NELC A200 - Intermediate Arabic I

NELC A250 - Intermediate Arabic II

NUR 100 - Guided Readings in Nursing

NUR 103 - Professional Seminar I: Communications, Ethics and Diversity

NUR 106 - Medical Terminology

NUR 115 - Nursing I: Introduction to Nursing

NUR 117 - LPN Nursing Mobility Seminar

NUR 130 - Essential Clinical Skills

NUR 202 - Nursing II: Medical-Surgical Nursing of Adults

NUR 224 - Nursing IIIA (Medical-Surgical Nursing of Adults)

NUR 225 - Maternity Nursing A

NUR 240 - Psychiatric Mental Health Nursing A

NUR 241 - Psychiatric Mental Health Nursing B

NUR 245 - Basic Cardiac Dysrhythmias

NUR 279 - Caring for Children and Families A

NUR 281 - Nursing Issues and Manager of Care

NUR 290 - Guided Study

NUR 295 - Concepts in Critical Thinking

NUR 309 - Transcultural Healthcare

NUR 311 - Intravenous Therapy

NUR 319 - Alternative and Complementary Therapies

NUR 334 - Clinical Pathophysiology

NUR 336 - Nursing IIIB: Medical-Surgical Nursing of Adults

NUR 337 - Statistics and Data Management in Health Sciences

NUR 339 - Research in Healthcare

NUR 344 - Introduction to Healthcare Informatics

NUR 345 - Trauma Nursing

NUR 346 - Advanced Health Assessment

NUR 359 - Disaster Healthcare

NUR 368 - Maternity Nursing B

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

NUR 379 - Caring for Children and Families B

NUR 399 - Special Topics

NUR 418 - Community/Public Health Nursing

NUR 419 - Advanced Acute Care Nursing

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

NUR 433 - Advanced Concepts in Critical Thinking

NUR 442 - Leadership in Nursing

NUR 490 - Nursing Practicum

NUR 537 - Advanced Statistics and Data Management in Health Sciences

OLS 121 - Keyboarding

OLS 211 - Professional Practice I

OLS 212 - Professional Practice II

OLS 252 - Human Relations in Organizations

OLS 262 - Practical Applications for Supervisors

OLS 268 - Elements of Law

OLS 274 - Applied Leadership

OLS 280 - Computer Applications for Supervisors

OLS 295 - Leadership Practicum

OLS 311 - Professional Practice III

OLS 312 - Professional Practice IV

OLS 320 - Customer Service and Commitment

OLS 324 - Advanced Word Processing, Desktop Publishing, Presentation Graphics

OLS 326 - Comprehensive Spreadsheet Concepts,

OLS 329 - Comprehensive Database Management Concepts,

OLS 331 - Occupational Safety and Health

OLS 342 - Interviewing Strategies in Organizations

OLS 350 - Applied Creativity for Business and Industry

OLS 351 - Innovation and Entrepreneurship

OLS 361 - Safety Department Supervision

OLS 362 - Cooperative Occupational Internship

OLS 364 - Professional Development Program

OLS 365 - Leading Virtual Teams

OLS 370 - Managing Job Stress and Health

OLS 375 - Training Methods

OLS 376 - Human Resources Issues

OLS 378 - Labor Relations

OLS 384 - Leadership Process

OLS 395 - Leadership Practicum

OLS 399 - Special Topics

OLS 410 - Survival Skills in Organizational Careers

OLS 411 - Professional Practice V

OLS 454 - Gender and Diversity in Management

OLS 468 - Personnel Law

OLS 474 - Conference Leadership

OLS 475 - Topics: Contemporary Supervisory Training Issues

OLS 476 - Compensation Planning and Management

OLS 477 - Conflict Management

OLS 479 - Staffing Organizations

OLS 484 - Leadership Strategies for Quality and Productivity

OLS 485 - Leadership for Team Development

OLS 486 - Leadership: Management of Change

OLS 487 - Leadership Philosophy

OLS 490 - Senior Research Project

OLS 495 - Leadership Practicum

OLS 496 - Leading Change: Theory and Practice

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

PACS P201 - Introduction to Peace and Conflict Studies - Social/Behavioral Sciences Perspectives

PACS P497 - Humanities Readings and Research in Peace and Conflict Studies

PACS P498 - Social and Behavioral Sciences Readings and Research in Peace and Conflict Studies

PACS P499 - Social and Behavioral Sciences Internship in Peace and Conflict Studies

PCTX 201 - Introductory Pharmacology

PHIL 110 - Introduction to Philosophy

PHIL 111 - Ethics

PHIL 111H - Ethics - Honors

PHIL 112 - Religion and Culture

Phil 112 - Religion and Culture (Honors Course)

PHIL 120 - Critical Thinking

PHIL 150 - Principles of Logic

PHIL 206 - Philosophy of Religion

PHIL 240 - Social and Political Philosophy

PHIL 240 - Social and Political Philosophy (Honors Course)

PHIL 245 - Introduction to Judaism

PHIL 250 - Inductive Logic

PHIL 260 - Philosophy and Law

PHIL 275 - The Philosophy of Art

PHIL 301 - History of Ancient Philosophy

PHIL 302 - History of Medieval Philosophy

PHIL 303 - History of Modern Philosophy

PHIL 304 - 19th Century Philosophy

PHIL 305 - Philosophical Theories of Feminism

PHIL 312 - Medical Ethics

PHIL 326 - Business Ethics

PHIL 327 - Environmental Ethics

PHIL 328 - Ethics and Animals

PHIL 330 - Religions of the East

PHIL 331 - Religions of the West

PHIL 351 - Philosophy of Science

PHIL 425 - Metaphysics

PHIL 431 - Contemporary Religious Thought

PHIL 432 - Theory of Knowledge

PHIL 435 - Philosophy of Mind

PHIL 450 - Symbolic Logic

PHIL 480 - Practicum in Applied Ethics

PHIL 493 - Interdisciplinary Undergraduate Seminar

PHIL 504 - Human Rights Ethics

PHIL 510 - Phenomenology

PHIL 514 - 20th Century Analytical Philosophy I

PHIL 515 - 20th Century Analytical Philosophy II

PHIL 524 - Contemporary Ethical Theory

PHIL 525 - Studies in Metaphysics

PHIL 530 - Deconstructionist and Postmodernist Philosophy

PHIL 575 - Problems in Esthetics

PHIL 580 - Proseminar in Philosophy

PHIL 590 - Directed Readings in Philosophy

PHYS 105 - Sound and Music

PHYS 115 - Introduction to Lasers

PHYS 120 - Physics of Sports

PHYS 125 - Light and Color

PHYS 127 - Physics for Computer Graphics and Animation

PHYS 128 - Physics of Martial Arts

PHYS 130 - Exploring the New Physics

PHYS 131 - Concepts in Physics I

PHYS 132 - Concepts in Physics II

PHYS 135 - The First Three Minutes

PHYS 136 - Chaos and Fractals

PHYS 152 - Mechanics

PHYS 170 - Special Topics in Physics

PHYS 183 - Professional Practice I

PHYS 184 - Professional Practice II

PHYS 201 - General Physics I

PHYS 202 - General Physics II

PHYS 218 - General Physics

PHYS 219 - General Physics II

PHYS 220 - General Physics

PHYS 221 - General Physics

PHYS 251 - Heat, Electricity, and Optics

PHYS 270 - Special Topics in Physics

PHYS 284 - Professional Practice III

PHYS 302 - Puzzles, Games, and Problem Solving - Honors

PHYS 302 - Puzzles, Strategy Games, and Problem Solving in the Physical Sciences

PHYS 310 - Intermediate Mechanics

PHYS 312 - Intermediate Electricity and Magnetism

PHYS 313 - Intermediate Electricity and Magnetism II

PHYS 314 - Introduction to Medical Physics

PHYS 322 - Optics

PHYS 325 - Scientific Computing

PHYS 326 - Motion, Biomechanics and Animation

PHYS 330 - Intermediate Electricity and Magnetism

PHYS 331 - Electricity and Magnetism II

PHYS 342 - Modern Physics

PHYS 343 - Modern Physics Laboratory

PHYS 345 - Optics Laboratory I

PHYS 346 - Advanced Laboratory I

PHYS 361 - Electronics for Scientists

PHYS 366 - Professional Practice IV

PHYS 370 - Special Topics in Physics

PHYS 405 - Atomic and Molecular Physics

PHYS 470 - Special Topics in Physics

PHYS 487 - Professional Practice V

PHYS 511 - Laser Physics

PHYS 515 - Thermal and Statistical Physics

PHYS 520 - Mathematical Physics

PHYS 522 - Coherent Optics and Quantum Electronics

PHYS 524 - Physical Optics and Experimental Spectroscopy

PHYS 536 - Electronic Techniques for Research

PHYS 545 - Solid State Physics

PHYS 550 - Introduction to Quantum Mechanics

PHYS 570 - Selected Topics in Physics

PHYS 590 - Reading and Research

POLS S103 - Introduction to American Politics - Honors

POLS S105 - Introduction to Political Theory - Honors

POLS S200 - Political Topics

POLS S211 - Introduction to Law - Honors

POLS S401 - Studies in Political Science

POLS Y101 - Introduction to Political Science

POLS Y103 - Introduction to American Politics

POLS Y105 - Introduction to Political Theory

POLS Y107 - Introduction to Comparative Politics

POLS Y109 - Introduction to International Relations

POLS Y150 - Foundations of Community Advocacy

POLS Y200 - Contemporary Political Topics

POLS Y203 - The Promise and Problems of Democracy

POLS Y205 - Elements of Political Analysis

POLS Y211 - Introduction to Law

POLS Y301 - Political Parties and Interest Groups

POLS Y303 - Formation of Public Policy in the United States

POLS Y304 - Constitutional Law

POLS Y305 - Constitutional Rights and Liberties

POLS Y306 - State Politics in the United States

POLS Y307 - Indiana State Government and Politics

POLS Y308 - Urban Politics

POLS Y309 - Intergovernment Relations

POLS Y312 - Workshop in State and Local Government

POLS Y317 - Voting, Elections, and Public Opinion

POLS Y318 - The American Presidency

POLS Y319 - The United States Congress

POLS Y320 - Judicial Politics

POLS Y324 - Women and Politics

POLS Y328 - Women and the Law

POLS Y335 - Western European Politics

POLS Y337 - Latin American Politics

POLS Y339 - Middle Eastern Politics

POLS Y340 - East European Politics

POLS Y350 - Politics of the European Union

POLS Y360 - U.S. Foreign Policy

POLS Y367 - International Law

POLS Y371 - Workshop in International Topics

POLS Y374 - International Organization

POLS Y376 - International Political Economy

POLS Y378 - Problems in Public Policy

POLS Y381 - History of Political Theory I

POLS Y382 - History of Political Theory II

POLS Y383 - American Political Ideas I

POLS Y384 - American Political Ideas II

POLS Y394 - Public Policy Analysis

POLS Y395 - Quantitative Political Analysis

POLS Y398 - Internship in Urban Institutions

POLS Y401 - Studies in Political Science

POLS Y480 - Undergraduate Readings in Political Science

POLS Y482 - Practicum

POLS Y490 - Senior Seminar in Political Science

POLS Y496 - Foreign Study in Political Science

POLS Y499 - Honors Thesis

PSY 100 - Introduction to the Science and Fields of Psychology

PSY 120 - Elementary Psychology

PSY 120H - Elementary Psychology - Honors

PSY 201 - Introduction to Statistics in Psychology

PSY 203 - Introduction to Research Methods in Psychology

PSY 203H - Introduction to Research Methods in Psychology - Honors

PSY 205 - Testing and Measurement

PSY 235 - Child Psychology

PSY 235H - Child Psychology - Honors

PSY 240 - Introduction to Social Psychology

PSY 240H - Introduction to Social Psychology - Honors

PSY 251 - Health Psychology

PSY 272 - Introduction to Industrial-Organizational Psychology

PSY 310 - Sensory and Perceptual Processes

PSY 314 - Introduction to Learning

PSY 314H - Introduction to Learning - Honors

PSY 317 - Addictions: Biology, Psychology and Society

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

PSY 330 - Psychology of the Arts

PSY 333 - Motivation

PSY 334 - Cross Cultural Psychology

PSY 335 - Stereotyping and Prejudice

PSY 345 - Psychology of Women

PSY 350 - Abnormal Psychology

PSY 350H - Abnormal Psychology - Honors

PSY 353 - Social and Personality Development in Children

PSY 362 - Human Development II: Adolescence

PSY 365 - Development of Gender Roles in Children

PSY 367 - Adult Development and Aging

PSY 367H - Adult Development and Aging - Honors

PSY 369 - Development Across the Lifespan

PSY 371 - Death and Dying

PSY 392 - Special Topics in Psychology

PSY 392H - Special Topics in Psychology - Honors

PSY 416 - Cognitive Psychology

PSY 419 - Psychopharmacology

PSY 420 - Introduction to Personality Theory

PSY 426 - Language Development

PSY 441 - Advanced Research in Personality and Social Psychology

PSY 444 - Human Sexual Behavior

PSY 460 - Advanced Abnormal Psychology

PSY 475 - Work Motivation and Job Satisfaction

PSY 480 - Field Experience in Psychology

PSY 490 - Practicum in Psychotherapy

PSY 495 - Issues in Psychology

PSY 496 - Readings and Research in Psychology

PSY 498 - Senior Research

PSY 499 - Honors Thesis in Psychology

PSY 523 - Introduction to Theories of Psychotherapy

PSY 526 - Psycholinguistics

PSY 532 - Psychological Disorders of Childhood

PSY 540 - History of Psychology

PSY 550 - Introduction to Clinical Psychology

PSY 590 - Individual Research Problems

PSY 592 - Advanced Special Topics

REL 112 - Religion and Culture

REL 230 - Religions of the East

REL 231 - Religions of the West

REL 293 - Topics in Religious Studies

REL 301 - Islam

REL 302 - Christianity

REL 311 - African Traditional Philosophy and Religion

REL 312 - The Black Religious Experience

REL 314 - Religion and Violence

REL 321 - Religion and the Civil Rights Movement

REL 381 - Islam and Modernity

REL 401 - Studies in Sacred Texts

REL 402 - Mysticism

REL 495 - Individual Readings in Religious Studies

SE 510 - Systems Engineering

SE 520 - Engineering Economics

SE 530 - Systems Engineering Management

SE 540 - Systems Architecture

SE 595 - Selected Topics in Systems Engineering

SLAV R111 - Elementary Russian I

SLAV R112 - Elementary Russian II

SLAV R214 - Second-Year Russian I

SLAV R215 - Second-Year Russian II

SOC S161 - Principles of Sociology

SOC S163 - Social Problems

SOC S211 - Topics in Social Organization

SOC S221 - Topics in Deviance

SOC S225 - Violence

SOC S230 - Society and the Individual

SOC S260 - Intermediate Sociological Writing

SOC S295 - Selected Topics in Sociology

SOC S298 - Colloquium in Sociology and Women's Studies

SOC S300 - Race and Ethnic Relations

SOC S303 - Industrial Sociology

SOC S305 - Population

SOC S308 - Introduction to Comparative Sociology

SOC S309 - The Community

SOC S312 - Education and Society

SOC S313 - Religion and Society

SOC S314 - Social Aspects of Health and Medicine

SOC S315 - Work and Occupations

SOC S316 - The Family

SOC S317 - Social Stratification

SOC S318 - Social Change

SOC S320 - Deviant Behavior and Social Control

SOC S324 - Mental Illness

SOC S325 - Criminology

SOC S328 - Juvenile Delinquency

SOC S330 - Sociological Social Psychology

SOC S331 - Sociology of Aging

SOC S333 - Collective Behavior and Social Movements

SOC S338 - Sociology of Gender Roles

SOC S340 - Social Theory

SOC S351 - Social Statistics

SOC S352 - Methods of Social Research

SOC S360 - Topics in Social Policy

SOC S398 - Internship in Sociology

SOC S402 - The Empire of the United States of America

SOC S410 - Advanced Topics in Social Organization

SOC S413 - Sex Inequality in Society

SOC S420 - Advanced Topics in Deviance

SOC S425 - Violence and Society

SOC S431 - Topics in Social Psychology

SOC S441 - Topics in Social Theory

SOC S450 - Topics in Methods and Measurement

SOC S470 - Senior Seminar

SOC S494 - Field Experience in Sociology

SOC S495 - Individual Readings in Sociology

SPAN S105 - Communication and Culture Spanish I

SPAN S106 - Communication and Culture Spanish II

SPAN S111 - Elementary Spanish I

SPAN S112 - Elementary Spanish II

SPAN S113 - Accelerated First Year Spanish

SPAN S203 - Second-Year Spanish I

SPAN S204 - Second-Year Spanish II

SPAN S220 - Chicano and Puerto Rican Literature

SPAN S246 - Women in Hispanic Literature

SPAN S260 - Introduction to Hispanic Film

SPAN S275 - Hispanic Culture and Conversation

SPAN S290 - Topics in Hispanic Culture

SPAN S301 - The Hispanic World I

SPAN S302 - The Hispanic World II

SPAN S311 - Spanish Grammar

SPAN S312 - Written Composition in Spanish

SPAN S315 - Spanish in the Business World

SPAN S316 - Commercial Spanish

SPAN S317 - Spanish Conversation and Diction

SPAN S407 - Survey of Spanish Literature I

SPAN S408 - Survey of Spanish Literature II

SPAN S411 - Spain: The Cultural Context

SPAN S412 - Spanish America: The Cultural Context

SPAN S413 - Hispanic Culture in the U.S.

SPAN S417 - Hispanic Poetry

SPAN S418 - Hispanic Drama

SPAN S420 - Modern Spanish-American Prose Fiction

SPAN S421 - Advanced Grammar

SPAN S425 - Spanish Phonetics

SPAN S426 - Introduction to Spanish Linguistics

SPAN S428 - Applied Spanish Linguistics

SPAN S450 - Don Quixote

SPAN S470 - Women and Hispanic Literature

SPAN S471 - Spanish-American Literature I

SPAN S472 - Spanish-American Literature II

SPAN S478 - Modern Spanish Novel

SPAN S479 - Mexican Literature

SPAN S480 - Argentine Literature

SPAN S488 - Spanish for Teachers

SPAN S494 - Individual Readings in Hispanic Studies

SPAN S495 - Hispanic Colloquium

SPAN W399 - Internship in Spanish

SPEA E100 - Environmental Topics

SPEA E162 - Environment and People

SPEA E272 - Introduction to Environmental Sciences

SPEA E400 - Topics in Environmental Studies

SPEA H120 - Contemporary Health Issues

SPEA H316 - Environmental Health Science

SPEA H320 - Health Systems Administration

SPEA H322 - Principles of Epidemiology

SPEA H352 - Health Finance and Budgeting

SPEA H371 - Human Resource Management in Healthcare Facilities

SPEA H402 - Hospital Administration

SPEA H411 - Chronic and Long-Term Care Administration

SPEA H416 - Environmental Health Policy

SPEA H422 - The Social Epidemics: AIDS, Violence, and Substance Abuse

SPEA H441 - Legal Aspects of Healthcare Administration

SPEA H455 - Topics in Public Health

SPEA H456 - Managed Care

SPEA H474 - Health Administration Ethics Seminar

SPEA J101 - The American Criminal Justice System

SPEA J201 - Theoretical Foundations of Criminal Justice Policies

SPEA J202 - Criminal Justice Data, Methods, and Resources

SPEA J260 - Topics in Criminal Justice

SPEA J301 - Substantive Criminal Law

SPEA J302 - Procedural Criminal Law

SPEA J303 - Evidence

SPEA J304 - Correctional Law

SPEA J305 - Juvenile Justice

SPEA J306 - The Criminal Courts

SPEA J310 - Introduction to Administrative Processes

SPEA J320 - Criminal Investigation

SPEA J321 - American Policing

SPEA J322 - Introduction to Criminalistics

SPEA J331 - Corrections

SPEA J369 - Private Justice: Police, Courts, and Corrections

SPEA J370 - Seminar in Criminal Justice

SPEA J376 - Principles of Public Safety

SPEA J380 - Internship in Criminal Justice

SPEA J433 - Institutional Corrections

SPEA J439 - Crime and Public Policy

SPEA J440 - Corrections in the Community

SPEA J445 - Trends in Corrections

SPEA J460 - Police in the Community

SPEA J470 - Seminar in Criminal Justice

SPEA J480 - Research in Criminal Justice

SPEA K300 - Statistical Techniques

SPEA V170 - Introduction to Public Affairs

SPEA V260 - Topics in Public Affairs

SPEA V263 - Public Management

SPEA V264 - Urban Structure and Policy

SPEA V270 - Survey of Administrative Techniques

SPEA V275 - Introduction to Emergency Management

SPEA V340 - Urban Government Administration

SPEA V348 - Management Science

SPEA V365 - Urban Development and Planning

SPEA V366 - Managing Behavior in Public Organizations

SPEA V368 - Managing Government Operations

SPEA V370 - Research Methods and Statistical Modeling

SPEA V371 - Financing Public Affairs

SPEA V372 - Government Finance and Budgets

SPEA V373 - Human Resources Management in the Public Sector

SPEA V376 - Law and Public Policy

SPEA V377 - Legal Process and Contemporary Issues in America

SPEA V378 - Policy Processes in the United States

SPEA V380 - Internship in Public Affairs

SPEA V381 - Professional Experience

SPEA V387 - Public Administration and Emergency Management

SPEA V389 - Risk and Hazard Mitigation

SPEA V390 - Readings in Public Affairs

SPEA V405 - Public Law and the Legislative Process

SPEA V406 - Public Law and the Electoral Process

SPEA V407 - Public Law and Government Relations

SPEA V421 - Metropolitan Development

SPEA V432 - Labor Relations in the Public Sector

SPEA V441 - Topics in Financial Management and Policy

SPEA V444 - Public Administrative Organization

SPEA V447 - Federal Budget Policy

SPEA V449 - Policy Senior Seminar

SPEA V450 - Contemporary Issues in Public Affairs

SPEA V450 - Contemporary Issues in Public Affairs (Honors Course)

SPEA V456 - Topics in Public Law

SPEA V457 - Management Science in the Public Sector

SPEA V465 - Geographic Information Systems for Public and Environmental Affairs

SPEA V471 - Urban Management Systems

SPEA V490 - Directed Research in Public and Environmental Affairs

STAT 125 - Communicating with Statistics

STAT 240 - Statistical Methods for Biology

STAT 301 - Elementary Statistical Methods I

STAT 340 - Elementary Statistical Methods II

STAT 490 - Topics in Statistics for Undergraduates

STAT 511 - Statistical Methods

STAT 512 - Applied Regression Analysis

STAT 514 - Design of Experiments

STAT 516 - Basic Probability and Applications

STAT 517 - Statistical Inference

STAT 519 - Introduction to Probability

STAT 528 - Introduction to Mathematical Statistics

TECH 540 - Reliability and Maintenance

TECH 557 - Tolerancing Techniques

TECH 561 - Industrial Projects Management and Control

TECH 569 - Simulation Modeling

TECH 574 - Advanced Quality Engineering Methods

THTR 134 - Fundamentals of Performance

THTR 136 - Rehearsal and Performance I

THTR 138 - Acting I

THTR 158 - Stagecraft

THTR 168 - Theatre Production I

THTR 201 - Theatre Appreciation

THTR 213 - Voice for the Actor

THTR 238 - Acting II

THTR 256 - Stage Makeup

THTR 261 - Introduction to Theatrical Design

THTR 264 - Rendering Techniques

THTR 284 - Textual Analysis

THTR 323 - Acting: Movement for the Actor

THTR 336 - Rehearsal and Performance II

THTR 338 - Acting III

THTR 351 - Costume Techniques I

THTR 355 - American Musical Theatre

THTR 360 - Scenic Design

THTR 361 - Costume Design

THTR 362 - Light Design

THTR 365 - Period Style for the Theatre I

THTR 366 - Period Style for the Theatre II

THTR 368 - Theatre Production II

THTR 376 - Introduction to Playwriting

THTR 390 - Directed Study of Special Theatre Problems

THTR 390 - Directed Study of Special Theatre Problems (Honors Course)

THTR 413 - Advanced Voice for the Stage

THTR 438 - Acting IV

THTR 440 - Beginning Directing

THTR 470 - Theatre and Society I

THTR 471 - Theatre and Society II

THTR 499 - Senior Performance Project

THTR 501 - Stage Management

THTR 504 - Summer Repertory Theatre

THTR 536 - Advanced Problems in Acting

THTR 540 - Advanced Directing

THTR 542 - Advanced Problems in Theatre Directing

THTR 560 - Advanced Scenic Design

THTR 561 - Advanced Costume Design

THTR 562 - Advanced Light Design

THTR 566 - Theatre Management

THTR 576 - Playwriting

THTR 583 - American Theatre History and Drama

THTR 590 - Directed Study of Special Theatre Problems

VCD F102 - Color Design

VCD H348 - History of Photography

VCD H390 - Topics in Art History

VCD H490 - Topics in Art History

VCD H495 - Readings and Research in Art History

VCD N198 - Introduction to Photography for Nonmajors

VCD N274 - Digital Imaging

VCD P151 - Design Fundamentals I

VCD P152 - Design Fundamentals II

VCD P243 - Photography Fundamentals

VCD P253 - Principles of Graphic Design I

VCD P254 - Principles of Graphic Design II

VCD P255 - Lettering and Typography

VCD P261 - Layout and Finished Art

VCD P271 - Illustration I

VCD P272 - Illustration II

VCD P273 - Computer Art and Design I

VCD P300 - Professional Practice Internship

VCD P343 - Advanced Photography I

VCD P344 - Advanced Photography II

VCD P351 - Advanced Design I

VCD P352 - Advanced Design II

VCD P356 - Package Design

VCD P357 - Display and Design

VCD P371 - Illustration III

VCD P372 - Illustration IV

VCD P374 - Computer Art and Design II

VCD P443 - Advanced Photography III

VCD P444 - Advanced Photography IV

VCD P450 - Senior Project

VCD P453 - Graphic Design III

VCD P454 - Graphic Design IV

VCD P475 - Computer Art and Design III

VCD P476 - Three-Dimensional Computer Modeling

VCD P478 - Computer Animation

VCD P490 - Topics in Studio Fine Arts

VCD P495 - Independent Study in Fine Arts

VCD P590 - Topics in Studio Fine Arts

VCD S105 - Introduction to Design

VM 102 - Careers in Veterinary

WOST W210 - Introduction to Women's Studies

WOST W225 - Gender, Sexuality, and Popular Culture

WOST W240 - Topics in Feminism

WOST W301 - International Perspectives on Women

WOST W302 - Topics in Women's Studies

WOST W304 - Feminist Theories

WOST W304 - Feminist Theories

WOST W340 - Topics in Lesbian and Gay Culture

WOST W400 - Topics in Women's Studies

WOST W480 - Practicum in Women's Studies

WOST W495 - Readings and Research in Women's Studies

Part 7: Services

Click on a link to be taken to the entry below.

1. Academic Advising
2. Academic Success Center
3. Alumni Relations
4. Athletics, Recreation, and Intramural Sports
5. AV Technology Services
6. Bookstore
7. Career Services
8. Center for Women and Returning Adults
9. Child Care
10. Collegiate Connection
11. Computer Resources
12. Continuing Studies
13. Crossroads
14. Dean of Students
15. Disabilities, Services for Students with
16. Diversity and Multicultural Affairs
17. Emergency Health and Security Services
18. Financial Aid
19. First Year Experience (FYE)
20. Health and Wellness Clinic
21. Honors Program
22. Housing Information
23. Independent Study
24. International Student Services
25. Library Services

26. Mastodon Advising Center (MAC)
27. Mastodon Performance Center (M.A.P)
28. Math Course Options
29. Math Test Center
30. Military Science and Leadership (Army ROTC)
31. Office of Academic Internships, Cooperative Education and Service-Learning (OACS)
32. IPFW/Parkview Student Assistance Program, Counseling Services
33. Police and Safety
34. Registration and Graduation
35. School-Based Program (SBP)
36. Spot Learning Center
37. Student Exchange Program
38. Student Handbook and Planner
39. Student Life and Organizations
40. Student Technology Education Programs (STEPS)
41. Supplemental Instruction
42. Testing Services
43. Transcripts and Academic Records
44. Tutorial and Study-Skills Assistance
45. Veterans' Services
46. Voter Registration
47. Women & Returning Adults
48. Writing Center

1. Academic Advising

While students are ultimately responsible for accomplishing their own educational goals and progressing toward graduation, IPFW is committed to helping them meet this responsibility by ensuring access to quality academic advising. This is evidenced by the Academic Advising Council, a group of advisors and others (including students) from across campus that constantly strives to improve advising services. Academic advisors are available to provide students with accurate, up-to-date information and appropriate guidance on academic matters. Students may find the names of their academic advisors by accessing my.ipfw on the IPFW home page or by contacting their academic units.

Students will benefit most from academic advising only when they accept a major share of the responsibility for seeking timely advice. Other, more specific obligations in the shared relationship between students and their academic advisors are as follows:

It is the academic advisor's responsibility to

- Be knowledgeable about university, school/division, and department academic regulations.
- Establish, maintain, and clearly post adequate and suitable office hours for advising (including information on summer availability).
- Assist the student with understanding degree requirements and the proper sequencing and selection of courses. This includes being knowledgeable about developmental course placement and any published changes in requirements.
- Assist the student with determining practical and manageable academic loads.
- Assist the student with monitoring academic progress.
- Document approved exceptions to the student's academic program.

- Explain the relationships among degree requirements, departmental philosophy, and as necessary, certification criteria.
- Assist the student with considering areas of enrichment appropriate to abilities and goals.
- Assist the student with linking programs of study to relevant career opportunities.
- Act, when appropriate, as a referral agent to other university personnel and services.

It is the student's responsibility to

- Be knowledgeable about university, school/division, and departmental program requirements; academic regulations; and calendar deadlines specified in the *Bulletin*, *Schedule of Classes*, and departmental publications.
- Consult with his/her advisor whenever appropriate and in a timely manner.
- Be prepared for all scheduled advising sessions.
- Make academic decisions based upon the information obtained or recommendations offered. Academic advisors will not make decisions for students.
- Act upon academic decisions in a timely manner.
- Maintain personal records of academic progress, including documentation of approved exceptions to stated program requirements.
- Seek additional or supplemental advice from other university personnel or services as needed or recommended.
- Present and candidly discuss factors (such as employment, commuting distance, and other circumstances) that might influence selection of classes, registration processes, and other academic planning.

2. Academic Success Center (ASC)

ASC is the home to three divisions including:

- **Center for Academic Support and Advancement (CASA):** CASA provides an array of support services for promoting students' academic success. Course-specific tutoring and computer-based tutorials help to develop understanding and proficiency while building confidence. With CASA, under prepared students can prepare, prepared students can advance, and advanced students can excel. Kettler G23 (260-481-6817)
- **First Year Experience (FYE):** FYE makes it easier for students to find their way around, make friends and succeed academically. Students will connect with other students, faculty, and staff through exceptional academic programs and an exciting campus life. A powerful way to experience FYE is through Learning Communities, Which consist of groups of students in linked or paired courses. Communities foster a deeper understanding, integrate different classes with each other, and contain a social element that links classroom experiences with fun and rewarding activities both on and off campus. Kettler G25 (260-481-6077)
- **Mastodon Advising Center (MAC):** MAC is dedicated to advising students classified as exploratory, deciding and non-degree. Kettler 109 (260-481-6077)

3. Alumni Relations

More than 44,000 graduates, residing in 50 states and 38 countries, are alumni of IPFW. With eighty percent of IPFW alumni remaining in Indiana, their work is seen in the growth and economic development of the state.

IPFW students have a chance to connect with alumni in a variety of ways, including:

Fall Dining Etiquette and Mentoring Dinner: learn business etiquette and then have dinner with an IPFW graduate who is in the career field the student hopes to enter.

Personal Student-to-Alumni One-on-One Visits: Connected via the alumni office, you can chat with or spend the day with an IPFW graduate in the career field you'd like to be employed.

Fall Homecoming: celebrate during the pre-game with IPFW graduates, faculty and staff.

Legislative Issues Luncheon: Each fall, students are asked to join alumni and faculty in having lunch with our northeast Indiana legislators and talking about the financial needs of IPFW. Each spring, we transport students, alumni, and faculty to the Indianapolis statehouse for another luncheon with our northeast Indiana legislators.

Scholarships: Students who are alumni or children of alumni are eligible for more than \$5,000 in scholarships through the Alumni office. Applications are available at the beginning of the spring semester.

The IPFW Alumni Relations office is located in Walb 125, 260-481-6807, www.ipfw.edu/alumni.

4. Athletics, Recreation, and Intramural Sports

Athletics, Recreation, and Intramural Sports (Hilliard Gates Center 210, 481-6643) administers sports-related university activities and manages the Hilliard Gates Sports Center Fitness Center, and manages Healthy Purdue wellness events and programs. Contact the office for further information about programs and fees.

Intercollegiate athletics are open to all qualified students. IPFW competes in the National Collegiate Athletics Association (NCAA) Division I and is a member of The Summit League and the Midwest Intercollegiate Volleyball Association (MIVA). IPFW offers the following programs:

Basketball	Baseball	Volleyball	Golf
Cross Country	Soccer	Tennis	
Indoor Track (Women's)	Outdoor Track (Women's)	Softball	

Information about athletics participation is available from the Athletics, Recreation, and Intramural Sports and the Admissions offices, or go to www.gomastodons.cstv.com.

Intramural programs are open to all eligible IPFW students, faculty, and staff and include the following sports: badminton, basketball, billiards, flag football, racquetball, table tennis, volleyball, and wallyball. Annual tournament events include a 5K run/walk event and a golf meet. Call 260-481-6617 for more details.

IPFW Hilliard Gates Sports Center is the fitness center on campus for all IPFW students with valid IPFW ID cards. Memberships are also available to IPFW student spouses, faculty, staff, alumni, and community members. Indoor facility offers a 1/9 mile indoor walk/running track, strength training room, cardiovascular conditioning room, racquetball courts, wallyball courts, basketball courts, core conditioning area, and fitness class room. Outdoor facilities include 5km and 10km cross country courses, soccer fields, baseball and softball fields, and tennis courts. Fitness services include fitness assessments, fitness classes, "getting started" fitness consultations, nutrition consultations, personal fitness training packages, free education/awareness handouts, and special events like fitness workshops and walk/run events. For membership costs and more facility information call 260-481-6655, 260-481-6647, or visit our Web site www.gomastodons.cstv.com.

Healthy Purdue wellness events, services, and programs on campus are available to IPFW students, faculty, staff, retirees, and community members. Programs and services are implemented at Hilliard Gates Sports Center, IPFW/Parkview Health and Wellness Clinic, and various campus locations. All opportunities are designed to educate, motivate, and support individual health needs and goals. Physicals, sick care, and other medical services are offered at the clinic. Health awareness workshops, 6-14 week programs, wellness screenings, blood health screenings, flu shots, and special events like Mental Health day, Great American Smokeout "stop smoking" Block Party, Eating Disorder Awareness Week, and Health Fair are also provided by the wellness staff. For information on IPFW wellness call 260-481-6647, 260-481-6746, or visit www.ipfw.edu/health

5. AV Technology Services (AVTS)

AV Technology Services provides AV media and technology support services on campus for university purposes. The range of equipment and services provided by AVTS to the campus community can be discussed by calling the AVTS office at 260-481-6519.

AVTS services can be scheduled in person at the AVTS office in Science Building, G43, by e-mail at avscheduling@ipfw.edu, by fax at 260-481-6517, or by phone at 260-481-6519. For student activity functions, requests should be made through the Student Life office. AVTS office hours are 8 a.m.-5 p.m., Monday through Friday.

6. Bookstore

Follett's IPFW Bookstore (Kettler G10, 260-483-6100) has served the academic community at IPFW for more than 35 years, fulfilling students' needs from freshman classes to purchasing graduation apparel. Conveniently located in Kettler G10, the bookstore offers textbooks, general books, academically priced software, computer hardware, apparel, gifts, and more. In addition, the bookstore gives you the convenience of ordering your textbooks and other items online at efollett.com. These items can be purchased for pick-up at the bookstore or shipped to your home. You can contact the bookstore at 260-483-6100 or by e-mail at bookstor@ipfw.edu.

7. Career Services

The Office of Career Services (Kettler 109, 260-481-0689) offers a variety of services to meet the career development needs of IPFW students and alumni, including career counseling, self-assessments, and internship and job search assistance. Students who need help with choosing a major or career can take our career planning class called EDUC X210. In addition, Career Services coordinates various programs throughout the year to assist students and alumni with their job search, including career fairs and networking events. Finally, many companies post a variety of employment opportunities with our office. Work-study, part-time, full-time, and internship opportunities are posted on JobZone, and our free job and resume database is available to IPFW students and alumni. For more information, please visit our Web site at www.ipfw.edu/career or call 260-481-0689.

8. Center for Women and Returning Adults

The Center for Women and Returning Adults (CWRA) (Walb 120, 481-6029) serves as an advocate for women and nontraditional students by providing academic, financial, and personal assistance while simultaneously familiarizing them with the network of services available on campus or in the community. The CWRA provides a continuum of services directed toward an extremely diverse subculture within the campus community. The nature of our services extends beyond the campus or student life spectrum into the life-planning arena that is specific to nontraditional students or individuals and family members. Our involvement in child care, housing, financial, and domestic abuse issues requires that our services be directed from the campus to the community. Special ongoing efforts designed to meet the needs of our subculture include STARS (Starting, Transfer, and Returning Students) orientations and Students with Families workshops and entertainment.

9. Child Care

Child care is available on a part-time basis for children of IPFW students, faculty, and staff. The IPFW Child Care Center is located at 4133 Hobson Road. Hours of operation during fall, winter, and spring are 7:45 a.m.-9 p.m. Monday through Thursday, and 7:45 a.m.-5 p.m. Fridays. Summer hours are 7:15 a.m.-8 p.m. Mondays, Tuesdays, and Thursdays; 7:45 a.m.-5 p.m. Wednesdays; and closed Fridays. Evening care is based on sufficient enrollment. The center provides care for children ages 2-12. For registration or more information, contact the Child Care Center at 481-0111.

10. Collegiate Connection

The Collegiate Connection (Kettler 102, 260-481-5478) program is an exciting opportunity for students to earn college credit while attending high school. Collegiate Connection means:

- Earning dual credit - college and high school.

- Taking more advanced courses or courses not offered at the high school level.
- Exploring a career direction.
- Earning accredited transferable university credit.
- Experiencing college!

Students must meet the following criteria for participation in the Collegiate Connection program:

- Passed both sections of the ISTEP
- Maintain a B average
- Completed (or will be able to complete) enough high school credits to meet CORE 40 or Academic Honors high school graduation requirements
- Parent/guardian approval

As a Collegiate Connection student, you may take any IPFW course that is appropriate for a college freshman. Some financial aid is available based upon need and is made possible with the support of the Lincoln Financial Foundation. Any student meeting the admission requirements and who qualifies for free and/or reduced textbook/lunch program is eligible to take up to two classes per semester (fall/spring) tuition-free. Students are responsible for their textbooks and transportation.

For additional information please call 260-481-5478, e-mail connection@ipfw.edu, or visit the program Web site at www.ipfw.edu/cconnect.

11. Computer Resources

IPFW's computing environment includes access to networked computers and a variety of software, from word processing to discipline-specific applications.

Student Accounts -(includes e-mail, my.ipfw, student-access labs) - Accounts for student computing resources are created upon the student's admission to IPFW. The student must complete an activation process before using the account including sending or receiving e-mail. Student e-mail accounts are accessible from any student-access lab, or the Web. Student accounts remain active as long as the student is enrolled.

Web Space-Each student and official student organization receives 10 MB of Web space to be used in conjunction with university responsibilities.

Computer Labs-All student-access computer labs and computer-equipped classrooms are capable of accessing many software applications, student e-mail, and the Internet. The student-access computer labs are in Kettler 204A, 217; Neff Hall B71 and B73 (a shared-use lab); Science Building G15; Helmke Library; and Walb Union 221. Besides these student-access labs, some schools and departments provide their students with access to additional specialized labs. The sponsoring departments define their availability and hours.

Getting Help -For the most current campus computing information and software documentation, visit the IT Services' Web site at www.its.ipfw.edu. Student consultants are available in person or via phone to assist students during most open lab hours. Student consultants cannot do assignments for students, but can answer general computing questions. In addition, IT Services provides consultants at the Help Desk in Kettler 206, 260-481-6030. Help Desk staff can answer questions about specific computer services and facilities available to students.

12. Division of Continuing Studies

The IPFW Division of Continuing Studies (Kettler 145, 260-481-6619) provides lifelong learning opportunities through its credit programs and public courses for professional development and personal enrichment. The Division manages approximately 20,500 enrollments annually.

The division increases student access to internationally recognized Indiana University and Purdue University degrees by partnering with the university's academic departments to provide the alternative delivery of college credit courses. The division manages off-campus instruction (Auburn, Bluffton, Decatur, Public Safety Academy, Kendallville, and

the IPFW Warsaw Center), distance-learning delivery (TV, Internet, and interactive video conferencing), and the university's Weekend College program. In addition, the division administers the associate and bachelor's degrees in general studies (A.A.G.S and B.G.S.) and offers special workshops for teachers that provide graduate credit applicable toward relicensure.

The Division of Continuing Studies also provides noncredit options, many of which yield continuing education units. These include public courses for personal and professional development and customized corporate training for regional businesses. For more targeted, in-depth training, selected professional development courses are grouped into certificate programs. These options offer students concise, career related education.

For more information about the Division of Continuing Studies and a listing of available courses, see www.ipfw.edu/dcs.

13. Crossroads: Connecting Learning Opportunities

To help you avoid the typical roadblocks experienced by transfer students - losing credits, time, and money - Ivy Tech Community College and IPFW are working together to ensure that certain courses will be equivalent and transferable between both institutions. That means you can take a variety of courses at Ivy Tech then transfer the credits to IPFW. Both schools have approved associate-to-bachelor's-degree programs that allow you to earn an associate degree at Ivy Tech then complete a bachelor's degree at IPFW. With Crossroads, you can enroll as either a part-time or full-time student - there is no time limit for completing the program. For more information, call 260-481-0748 or visit our Web site at www.ivytech.edu/fortwayne/crossroads.

14. Dean of Students

The dean of students office (Walb 111, 260-481-6601) may be contacted regarding any problem you are experiencing. Either direct assistance or referral to the appropriate individual or office will be provided. In addition, the dean and associate dean handle student conduct problems and advise students of their rights and responsibilities, provide assistance in pursuing late full withdrawals, grade appeals and student complaints, and serve as an advocate for students and their issues. The dean also oversees Personal Counseling Services, The Child Care Center, and Services for Students with Disabilities.

15. Disabilities, Services for Students with

Services for Students with Disabilities (SSD) coordinates IPFW's programming for students with disabilities, as required by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Persons with qualifying disability conditions per these regulations are eligible for specialized academic support services and other assistance through SSD.

SSD provides free and appropriate academic aids and services including reader and sign-language interpreter services, accommodated test proctoring facilities, disability-specific career/academic/personal counseling, coordination of the use of accessible computer workstations across campus, and more. SSD also serves the campus community as advocate/consultant on disability-related issues.

IPFW does not provide personal attendant care or transportation services. Students must be able to attend to their personal care and needs or must arrange independently for such services if needed. Although a personal escort may be provided during times of inclement weather, students are responsible for their transportation to and from campus and between classes and other facilities. Students with disabilities are responsible for attending classes as required by the class instructor's attendance policy.

To request services on the basis of disability or to receive further information, call 260-481-6657 (VOICE/TTD) or visit the director of SSD in Walb, Room 113.

16. Diversity and Multicultural Affairs

Diversity and Multicultural Affairs (Walb 118, 260-481-6608) provides a vital support system for African American, Asian American, Hispanic, international, Native American, and other underrepresented students enrolled at IPFW. Evening appointments can be arranged for students who cannot visit the office during regular hours.

Services include networking opportunities, cultural/heritage programs, educational and personal counseling, leadership development and enhancement, mentoring, workshops, and study tables.

Diversity and Multicultural Affairs also assists in the development, administration, and evaluation of student recruitment and retention efforts; sponsors outreach and programs for early access to higher education; and provides cultural diversity training for IPFW faculty and staff.

17. Emergency Health and Security Services

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For life-threatening emergencies, dial 911 from any university office telephone; then notify university police by calling 260-481-6911. From campus access-only phones, dial university police directly (16911). University police will call for additional assistance.

For routine healthcare needs, you are expected to remain under your personal physician's care while attending IPFW.

Escort service to and/or from classes for safety reasons is available anytime by dialing 16900 from any campus telephone.

IPFW Police and Safety (Support Services Building 102, 260-481-6827) and its officers are empowered to enforce state and local laws, as well as campus traffic and conduct regulations, and provide 24-hour emergency services on campus. The department conducts continuous security patrols, furnishes disabled-vehicle assistance, and maintains lost-and-found articles. Students and staff are urged to report all suspicious activity or other hazards to the department. Crime prevention policy information, crime incidence, and arrest statistics are available from Police and Safety.

18. Financial Aid

IPFW attempts to meet the demonstrated financial need of all applicants. The IPFW Financial Aid office uses grants, scholarships, loans, and part-time university employment to provide financial assistance to IPFW students. Review programs and eligibility information on our Web page at www.ipfw.edu/financial for specific information about eligibility requirements; application procedures; the types of aid available; and regulations related to scholarship, grant, loan, and other forms of assistance. A free brochure on federal aid is available in the Financial Aid office, or you can access the same information on the Internet at <http://studentaid.ed.gov>

Most financial aid programs at IPFW are based on the premise that the student and his/her family are responsible for paying the cost of the student's education, with consideration given to the family's current financial circumstances. IPFW financial assistance is awarded to help meet educational expenses not covered by the family's contribution.

Financial aid awards may be used to meet some costs of study-abroad and student-exchange programs, if IPFW credit will be awarded for the program and other requirements are met.

To apply for assistance, the student must file the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov and list Indiana University-Purdue University Fort Wayne (school code 001828) as the college the student plans to attend. The FAFSA generates the expected online family contribution (EFC), which is used to determine eligibility for financial aid; it is available online shortly after January 1. Applications from IPFW students that are received by March 10 at the federal processor are given priority consideration at IPFW. Information about specific procedures and assistance with filling out the FAFSA are available at the Financial Aid office.

If the student is eligible for financial aid and has submitted all additional required materials, he/she will receive e-mail notification when the awards are created. Freshmen will receive an e-mail and a paper award letter. To accept the aid that is offered, the student must log on to my.IPFW.edu and accept aid through the Financial Aid section under the Enrollment tab. Aid that a student accepts will be applied as a credit on the e-bill received after registering for classes.

The State Student Assistance Commission of Indiana (SSACI) requires students to be enrolled in at least 12 credit hours each semester through the end of the fourth week of classes in order to keep the Indiana Higher Education Award and/or the 21st Century Scholars grants.

Students may request a review of any decision concerning eligibility for aid, including satisfactory academic progress. A financial aid administrator will review the situation with the student. The student may appeal any decision to the director of IPFW Financial Aid. Final appeals may be made to the Scholarship and Financial Aid Advisory Committee. All determinations by this committee are final.

Satisfactory Academic Progress: All financial aid recipients are required to make reasonable academic progress toward completion of degree requirements. Standards for satisfactory academic progress involve two tests:

1. Students must successfully complete 67 percent of the credits attempted and earn at least the minimum GPA shown below:

Credits attempted Minimum cumulative GPA

0-29	1.5
30-59	1.7
60-180	2.0

Grades of I, W, F, or audit will not count toward credits successfully completed.

2. Students will not be allowed to receive aid for more than the total number of credits shown below for the certificate or degree program they are pursuing:

Bachelor's degree	180 credit hours
Associate degree (two-year programs)	90 credit hours
Associate degree (three-year programs)	130 credit hours
Certificate	45 credit hours
Master's Degree	45 credit hours

Financial aid recipients who do not meet the satisfactory academic progress standards will be placed on a probationary status and notified in writing that they have the opportunity to repair their record through their enrollment and counseling. Students who subsequently fail satisfactory academic progress standards will be notified in writing that they are no longer eligible for financial aid. If extenuating circumstances exist, a written appeal must be filed within 30 days of the date of notification. The appeal form and specific instructions will be included with the notification letter.

The Federal Ombudsman Office is a final resource for student loan borrowers to informally resolve loan disputes and problems after first seeking help through other customer service avenues. The Ombudsman Customer Service Line is 877-557- 2575 or you can access the Web site at <http://fsahelp.ed.gov>.

19. First Year Experience (FYE)

First year students at IPFW have the unique opportunity to become active participants in a very successful program, the First Year Experience (FYE). FYE eases the transition from high school to college and is a key component in students' overall academic success. In addition, students make crucial connections (with other students, faculty, and staff) and participate in co- and extra-curricular activities. All first-year students are encourage to enroll in an FYE Learning Community.

Most Learning Communities involves two or three linked courses specifically designed to integrate content. These courses will introduce students to different disciplines offered at IPFW and more importantly, will provide students with a social network that is critical to success. Nationwide research clearly indicates that students who participate in learning communities are more likely to succeed in college.

Learning Communities are a great opportunity for first-year students to get connected...and stay connected to IPFW. For more information go to <https://www.ipfw.edu/fye> or call 260-481-6077.

20. Health and Wellness Clinic

The IPFW/Parkview Health and Wellness Clinic provides comprehensive health services to meet the medical and psychological needs of students, faculty, and staff at IPFW.

Location The clinic is conveniently located in Walb Union, Room 234, 260-481-5748. Parking is available in the parking garage next to Hilliard Gates Sports Center.

Hours The clinic is open from 8 a.m. to 5 p.m. Monday through Thursday and 8 a.m. to noon Friday. Special hours, which will be posted, are in effect for holidays, semester breaks and summer.

Staff The clinic is staffed with two nationally certified family nurse practitioners and a medical assistant. Our collaborating physicians are John Mellinger, M.D., and Mark O'Brien, M.D.

Appointments Appointments are available for your convenience. Clients are also seen on a walk-in basis up to one hour prior to closing.

Services Provided Our master's prepared, nationally certified family nurse practitioners are able to

Assess/diagnose healthcare problems, obtain medical histories, perform physical examinations, and order and interpret diagnostic studies such as lab work and X-rays.

Treat and monitor minor and acute illnesses as well as chronic health problems, such as diabetes, and provide confidential gynecological services. Nurse practitioners prescribe medication and consult with physicians and other healthcare providers as needed.

Promote healthy living through patient education and counseling.

Allergy Injections Allergy serum may be stored at the clinic. Allergy injections can be given between 8 a.m. and 4:30 p.m. Monday through Thursday and 8 and 11:30 a.m. Friday during fall and spring semester. Administration of allergy injections during summer hours is limited.

Health and Wellness Education Health and wellness education includes screenings, assessments, consultations, workshops, classes, and resources to help individuals gain awareness and opportunities for better total wellness. Health education and counseling can include, but are not limited to, weight management, heart-healthy living, sports performance, eating disorders, diabetic control, smoking cessation, and stress management. Registered dietitians and certified physical fitness instructors are on staff to assist you.

Health Fees Our clinic is a fee-for-service health facility. Students at IPFW are NOT assessed a student health fee. We request payment at each visit by cash, check, or credit card.

Students enrolled in the university's health insurance will be charged their co-pay for a routine office visit. Due to the large number of health insurance plans carried by students, please call the clinic to see if we file with your particular insurance. We also carry Medicare and Medicaid. Please bring a copy of your insurance card for clinic appointments.

Upon checking out, an insurance-ready itemized statement will be provided so that you may submit it to your insurance company.

For those individuals with insurance that is out of network or who are without insurance, healthcare packages are available for purchase. Contact the Health and Wellness Clinic at 260-481-5748 for additional information. Visit the IPFW/Parkview Health and Wellness Clinic website for the most up-to-date information at <http://www.ipfw.edu/clinic>. Visit the Health and Wellness page for up-to-date campus wellness activities at www.ipfw.edu/health.

*Above information is subject to changes.

21. Honors Program

The Honors Program (Walb G25, 260-481-6924) is an undergraduate program that seeks to create learning opportunities and an environment of intellectual excitement and discovery through enriched courses of study and activities within a learning community. Honors courses supplement and enrich studies in any academic major. Students can take as many or as few honors courses as they choose. Participation in the Honors Program can help students get jobs and get into graduate programs after graduation. The Honors Certificate can give students a leading edge in today's tight job market. Honors courses are multidisciplinary and tend to be more interactive. Class size is limited to 20 students, so there is more interaction between students and instructors than in other classes.

The Honors Program also offers many social and cultural events outside of the classroom. Each semester, social events are planned to build an honors community and to enhance the college experience. There are opportunities to visit museums, view theatrical performances, and attend lectures. There are also parties and receptions that are primarily social events. These programs give students an opportunity to get to know each other and faculty members outside of the classroom.

See Honors Program in Part 5 of this Bulletin for details.

22. Housing Information

IPFW Student Housing (260-481-4180) provides apartment-style living for full-time students at IPFW. The IPFW Student Housing community will let you enjoy the freedom of apartment life without sacrificing the convenience and comfort of on-campus living. Each apartment is furnished and has a fully equipped kitchen including microwave, trash disposal, and dishwasher. Bedrooms are individually keyed for privacy, and each bedroom is set up with high-speed Internet and cable. Community amenities include a computer lab, fireside community lounge, fitness room, and 24-hour laundry facilities. Additional information is available from the Student Housing office or visit the Student Housing Web site at www.IPFWstudenthousing.com.

23. Independent Study

A variety of credit courses are offered through the Indiana University Division of Extended Studies' Independent Study Program by correspondence and online at the Bloomington campus. Brochures describing available courses and enrollment procedures are available from IPFW Admissions (Kettler 111, 260-481-6812) or online at <http://scs.indiana.edu>. To apply correspondence-course credit toward a degree, an enrollment form must be signed by the student's advisor, department chair, or dean/director.

24. International Student Services

The International Services office (Kettler 104, 260-481-6034) provides admissions and related services for new and continuing IPFW international students. Other services for international IPFW students include academic program planning and personal counseling, assistance with credit transfer and evaluation, visas, and related immigration concerns and issues. The office also coordinates various campus and community ethnic and cultural celebrations and serves as the advisor to the International Student's Organization.

25. Library Services

The Walter E. Helmke Library (260-481-6512) offers excellent collections and services for IPFW students. Information services include

- User assistance at all times the library is open (Ask at the Service Desk)
- In-depth research consulting (in person or via IM chat, e-mail, or phone)
- An extensive World Wide Web site (/)
- Remote access to hundreds of library databases and catalogs
- Librarian-prepared tutorials, course-related guides, and subject guides to materials and electronic information available at IPFW

- IUCAT, the online library catalog for IPFW, and all of the libraries in the Indiana University library system statewide
- Electronic course reserves, called ReservesEXpress, available 24-7

Collections are based on courses taught at IPFW and include more than 25,000 electronic and/or paper periodical subscriptions and well over 500,000 books, bound periodicals, and U.S. government publications on deposit, university archives, microforms, compact disks, videos, and art slides.

Since it is impossible for any library to collect all of the information materials available, the Helmke Library operates a fast and efficient document delivery service for needed research materials.

Special facilities include more than 55 networked computers with access to electronic databases and other resources, a Science and Technology Information Center, an electronic information training center, an after-hours study room that provides access to the Internet, and group study work stations with networked computers.

The Mastodon Card (www.ipfw.edu/idcards/getacard.htm) is also the Helmke Library borrower's card, good at all Indiana University libraries. Activate it for library services at the library service desk.

A virtual self-guided tour is available on the library's home page (www.lib.ipfw.edu/). Several informational brochures are available in the library.

26. Mastodon Advising Center

Mastodon Advising Center (Kettler 109, 260-481-6595) is responsible for providing academic advising for students classified as exploratory, deciding and non-degree. The academic advisors will provide assistance in the following areas: course selection/planning, academic monitoring, university, college and department regulations, identifying academic major and career choices. Students also have the opportunities to spend a semester or academic year at another college or university at a cost similar to IPFW, through the National Student Exchange program.

Special Categories of Students Advised in MAC

MAC provides academic advising for students who are admitted in the following special categories:

- **Exploratory.** The Exploratory Majors program serves students who do not qualify for regular admission into their intended major and would benefit from the extra attention. Professional advisors in the Mastodon Advising Center (MAC) provide information and direction toward special programs, sound academic skills, and tutorial services. Those admitted to the program are encouraged to participate in clubs and activities related to their intended major and work closely with professional academic advisors to ensure that they reach their educational goals. Students in the program must report their academic progress to their advisors, who can help identify any support services that may be needed. Students who complete at least 12 credits and earn a cumulative GPA of 2.0 or higher are eligible to declare their academic major.
- **Deciding.** Deciding students entering IPFW undecided about a major are advised in (MAC). While affiliated with MAC, students are given an opportunity to take classes without having to make an early commitment to a major. Deciding MAC students are encouraged to enroll in career-exploration courses, meet with career counselors in career services, and visit academic units to investigate potential majors.
- **Nondegree or Guest Students.** Students who are visiting or waiting for regular admission to IPFW may be assigned nondegree (guest/temporary) student status and assigned to MAC for course enrollment and related assistance. After earning 24 credits in nondegree status, students may register for additional credits only after applying for and being granted regular admission status through Admission.
- **Special Regulation on Readmission.** Students who have been dismissed from IPFW for academic reasons are encouraged to discuss readmission procedures with a MAC advisor. IPFW students who have been

dismissed and are seeking readmission through MAC must attend a readmission workshop and apply for early readmission consideration. Contact MAC for further details.

Regular office hours are 8 a.m.-6 p.m. Monday and Tuesday, and 8 a.m.-5 p.m., Wednesday and Thursday and 9 a.m.-5 p.m. Fridays during fall and spring semesters. For more information, please visit our Web site at www.ipfw.edu/mac or call 260-481-6595.

27. Mastodon Academic Performance Center

The Mastodon Academic Performance Center (M.A.P.) (Kettler 109) provides academic support for student-athletes helping them to achieve academic progress, maintain NCAA athletic eligibility, and graduate in their respective disciplines. Director Leslie Clark and Associate Director Chris Kuznar share the responsibility of providing support for 16 athletic teams. Additionally, the M.A.P. Center is responsible for the implementation of the NCAA Champs Life Skills program and supervision of the Student-Athletic Leadership Team (SALT).

28. Math Course Options

Flexible pacing is an option available for some mathematics classes. Students work on modules at their own pace with an instructor and aides. Testing is done at the Mathematics Test Center (Kettler G18) at the completion of each module; tests are retaken until the required level of performance is met. Successful completion of all modules yields the course grade. The completion of a specified number of exams allows continuation of the course in the next semester.

Out-of-class testing for mathematics courses is an option available for some mathematics classes. It involves traditional lectures, but tests are administered at the Mathematics Test Center. No time limits are placed on tests other than the operation hours of the Mathematics Test Center. Each test (except the final) can be taken up to three times, with only the highest score recorded.

29. Math Test Center

The Math Test Center (Kettler G18, 260-481-5722) is primarily for students who are taking mathematics courses with Flexible-Paced instruction or sections which use Out of Class Testing. In order to receive a test, students must have a photo ID. More information and current hours of operation can be found at <http://www.ipfw.edu/casa>.

30. Military Science and Leadership (Army ROTC)

Army Reserve Officer's Training Corps, ROTC, is one of the best leadership courses in the country offered within a college curriculum, and it is available at Indiana University-Purdue University Fort Wayne, through the College of Engineering, Technology, and Computer Science. During classes and field training, students learn first-hand what it takes to lead others, motivate groups and conduct missions as an officer in the Army. ROTC students maintain a normal academic schedule like all college students, but they enroll in Military Science and Leadership courses each semester. Upon graduation from IPFW and Army ROTC, cadets are commissioned as a Second Lieutenant.

For more information contact Captain Jamie Smith, U.S. Army, at 260-481-0154 or smithjj@ipfw.edu.

31. Office of Academic Internships, Cooperative Education & Service-Learning (OACS)

Cooperative Education (co-op) is a national recognized academic enhancement training program that allows students to gain valuable employment experience related to their majors. Students are paid competitive wages and may receive academic credit. Local employers offer co-op jobs in biology, chemistry, communication, English, mathematics, physics, engineering, technology, computer science, business, and organizational leadership and supervision. Eligibility requirements include currently enrolled student, completion of freshman courses toward a bachelor's degree, and the established departmental GPA prerequisite.

Service-Learning is a credit-bearing, educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility.

Academic Internships involve any work experience that is related to your educational and career goals. Internships may be part-time or full-time, paid or volunteer and are available in many professional areas including law corrections, probation, education, health, community services, government, private business, and many more.

The IPFW OACS office is open Monday-Friday, 8 a.m.-5 p.m., and by appointment (www.ipfw.edu/oacs; Neff Hall 337, 260-481-6939).

32. IPFW/Parkview Student Assistance Program, Counseling Services (SAP)

IPFW/Parkview Student Assistance Program (SAP) provides free and confidential short term services to all currently enrolled IPFW students. SAP works with a variety of concerns, including but not limited to: depression, anxiety, relationship issues, substance abuse and eating disorders. SAP is available for consultation, outreach and workshops upon request. They are located in Walb Student Union room 210. Please call (260-373-8060 or (800) 721-8809 to schedule an appointment.

33. Police and Safety

Campus Safety and Security Information IPFW strives to provide a safe and secure environment for students, staff, and visitors. The safety report pamphlet details a variety of safety services, policies, and information available to students, staff, and visitors. To obtain a copy, contact Admissions, Police and Safety, or Human Resources. Police and Safety is staffed 24 hours per day. To view the report, go to www.ipfw.edu/police/reports/IPFW_Police_Current_Annual.pdf For additional information, go to www.ipfw.edu/police.

Emergency Procedures

First Aid In life-threatening emergencies call 911 from a campus telephone or notify the university police by calling 16911 from any campus telephone or any emergency telephone on campus.

Escort Service Call 16900 to give your location and to request service.

Fire Emergencies Fire alarm pull boxes are located in all campus buildings. If you suspect a fire emergency, pull a fire alarm at once. Whenever you hear this continuous horn sound, use the nearest exit to leave the building as quickly and safely as possible. Once outside, move away from the building. Don't use elevators during fire emergencies or when you are in an otherwise unoccupied building.

Weather Emergencies Intermittent blasts of the alarm horn indicate a TORNADO WARNING is in effect (a tornado has been sighted nearby). Take shelter in one of the following areas until notified by university officials it's safe to leave:

- (CM) Classroom-Medical Building basement
- (ET) Engineering, Technology, and Computer Science Building ground-floor corridor
- (GC) Gates Sports Center basement
- (KT) Kettler basement or ground floor of south and east wings
- (LB) Helmke Library basement
- (LS) Life Sciences Resource Center, ground floor
- (MB) Instrumental Rehearsal Room
- (NF) Neff Hall basement

- (PG-1) Parking Garage Ramp B Gold
- (PG-2) Parking Garage Lower-Level Interior Ramp
- (SB) Science Building ground floor corridor
- (VA) Visual Arts Building ground floor restrooms or corridor
- (WT) Williams Theatre to Visual Arts Building ground-floor restrooms or corridor
- (WU) Walb ground-floor stair areas

If you are in the Support Services Building or Printing Services/Warehouse, go to the Classroom-Medical Building basement.

Adverse Weather During the winter months, snow emergencies and snow recesses are occasionally unavoidable. During an adverse weather closing, classes are canceled, and only essential personnel are to report. If you suspect that an adverse weather closing has occurred, please monitor radio and television stations for announcements or call the IPFW Weather Line at 260-481-6050.

Traffic Parking Rules Summary

Authority These regulations are adopted pursuant to the authority conferred by the laws of the State of Indiana upon the Boards of Trustees of Indiana University and Purdue University.

The respective Boards of Trustees deem it necessary and desirable to make and enforce these regulations for the safety and welfare of students, staff, and visitors in protection of property and the safe operation of the IPFW campus.

University police are empowered to enforce state laws and campus regulations under the supervision of the vice chancellor for financial affairs.

Definitions When used in these regulations, the following words and phrases have these meanings:

Parked vehicle: a motor vehicle with no licensed driver at the wheel.

Permit: a parking placard issued by Police and Safety or its designees.

Restricted hours: when classes are in session between 7 a.m. and 11 p.m. Mondays through Saturdays and 10 a.m. and 11 p.m. on Sundays. During restricted hours, you must display a valid permit to park in designated "A" (employee) or handicapped parking areas. Appropriate coins must be placed in meters during these hours.

Vehicle: any propelled device with two or more wheels.

Visitor: a person who is neither a student nor a staff member, including people attending meetings or conferences.

Permits

Registration Procedures-Vehicle registration is required on an annual basis on or before the first day of classes for faculty and staff wishing to park in an "A" lot or for anyone requiring a disabled-parking permit. All vehicles parked in these areas without a permit will be ticketed. Staff and faculty parking permits must be obtained from Police and Safety in the Physical Plant building.

Registration permits issued for cars and trucks are to be attached to the rearview mirror post with the permit number visible from the vehicle front. Only a current permit should be displayed. The parking permit is for use only by the purchaser and is the property of IPFW.

Parking Regulations

"A" parking lots shall be used during restricted hours only by motor vehicles with an "A" permit (**designated by green lined spaces**). Some, but not all, "A" lots change to open parking after 5 p.m. weekdays and 7 a.m. to 11 p.m. on weekends. (**Note: Not all "A" lots change to open parking**). Signs in each lot will indicate if and when the lot will change to open parking. Both parking garages have areas designated as "A" parking and metered short-term parking. All undesignated areas are considered open parking and no permit is required.

Special and temporary parking permits may be obtained from Police and Safety when extenuating circumstances exist. If you arrive on campus and realize you do not have your permit, you may pick up a temporary permit at Police and Safety.

Authorization to leave a vehicle on campus overnight must be obtained from Police and Safety. Unauthorized vehicles left on campus 72 hours will be considered abandoned and will be removed. An accumulation of unpaid fines or improper parking will also provide cause for towing at owner's expense. Dock parking is only for loading and unloading vehicles. People who need to use the dock for more than 15 minutes must obtain authorization from Police and Safety.

People operating motorcycles may park in a vehicle stall or on motorcycle pads. Vehicles shall be parked between painted stall lines or in front of bumper blocks that indicate individual parking space.

The Allen County Extension office's parking lot is for clients only, and not for use by the campus community.

Traffic Regulations

Campus vehicle operators must:

- obey all state and local regulations, including signs, signals, markings, and other traffic-control devices.
- not maintain a speed of more than 20 mph unless otherwise posted. In parking lots, the maximum speed is 15 mph. Parking is never permitted within 15 feet of a fire hydrant or in designated fire lanes. People parking on grass will be ticketed and held responsible for damages.

Pedestrians have the right of way in all crosswalks. If a pedestrian enters or is about to enter a marked crossing, approaching vehicles must stop while the pedestrian is in the crossing.

All traffic accidents that occur on campus must be reported immediately.

All bicycles must be parked in bicycle racks. Bicycles chained to trees or signs or taken inside buildings may be impounded.

Skateboard use on campus is prohibited. See Police and Safety for the roller blading policy.

Violations and Fines

Meter Violation	\$ 15
Failure to display a permit in "A" lot	\$ 25
("A" permit holder who forgot permit)	\$ 5
Improper Parking	\$ 25
Moving Violation	\$ 60
Handicapped Parking Only	\$100
Fire Lane	\$ 50
Displaying lost/stolen/counterfeit permit	\$ 50

There is a charge to replace a lost or stolen permit.

Appeals Appeal forms are available at Police and Safety (in the Physical Plant). Campus tickets may be appealed to the Traffic Appeals Board, which consists of faculty, staff, and students. Board decisions are binding and final.

If a ticket recipient does not respond or pay the fine within five working days from the date of issuance, Police and Safety shall notify the recipient by mail that unless the ticket/fine is appealed in writing or is paid within 10 working days after the date of notice, the ticket recipient has forfeited any appeal privilege. An administrative encumbrance fee shall be added to each unpaid fine. No appeals will be accepted or considered by any university appellate body unless filed within the 15-day period.

Failure to satisfy delinquent fines may result in denial of future academic registration, denial of parking privileges, and/or removal of vehicle from campus at owner's expense.

34. Registration and Graduation

The IPFW *Schedule of Classes* is published for each semester and the summer sessions and is widely distributed on campus and published at the OASIS Web site, my.ipfw.edu. The OASIS Web site provides detailed current information about

- course offerings
- registration days and times
- fees and refunds
- the semester/session calendar
- important deadlines
- final-examination schedules
- general policies and procedures

Before you meet with your advisor, you should carefully examine each edition of the *Schedule of Classes* and make a tentative selection of classes in which you wish to enroll.

For the convenience of students with late-evening and weekend classes, a drop box is on the door of the registrar's office (Kettler 107). In most cases, deposited forms containing all applicable information and required signatures will be processed by noon on the next working day. Partially completed forms cannot be processed. This drop box is not secured for the deposit of checks, cash, or other financial transactions. All financial transactions are to be directed to the bursar's office (Kettler G57).

Graduation Information To be considered for graduation from an IPFW program, you must submit an application for graduation. If you do not apply for graduation by the deadline posted, you may not be considered for honors; your name may not appear in the program; and your spring degree may not be available at Commencement.

Please visit the Office of the Registrar's Web site, www.ipfw.edu/registrar, and click on Graduation information or contact your department.

If you are finishing your degree: Application Deadline

Fall Semester	June 1
Spring Semester	Nov. 1
Summer I Session	Feb. 1
Summer II Session	Feb. 1

35. School-Based Program Program (SBP)

The IPFW School-Based Program is a partnership between IPFW and participating high schools in northeastern Indiana. SBP offers college credit to qualified high school students who enroll in IPFW general education courses that

are offered at their local high schools during the regular school day and taught by approved high schools teachers who hold adjunct lecturer status with IPFW. SBP courses are administered from the Fort Wayne campus in conjunction with the Collegiate Connection program.

SBP is for high school students, generally juniors or seniors, who have adequate preparation and the desire for more advanced work. Through its course offerings, SBP provides an opportunity for high school students to begin college work while in high school. The SBP courses are actual college courses intended to allow a wide range of students to engage in college level work for college credit. SBP courses are designed for students who have both a solid academic foundation, whose interests can be furthered by acquiring college credit prior to graduation, and who make a serious commitment to completing the SBP course successfully.

You receive both high school and college credit while you:

- Get an early start on your college degree (and perhaps finish sooner).
- Begin building a college transcript. Most courses are transferable to Indiana colleges and universities.
- Receive a substantial tuition remission.
- Gain access to IPFW technology and resources.
- Complete an Indiana high schools honors diploma requirement option.
- Gain access to additional course choices designed for high-achieving students like you.

For more information, visit the IPFW SBP Web page at www.ipfw.edu/dcs/sbp or call the Collegiate Connection office at 260-481-5478.

36. SPOT Learning Center

The SPOT Learning Center (Kettler G21, 260-481-5419) offers free tutoring, day and evening, for many courses. Students are allowed up to two (2) free hours of a one-to-one tutoring per week per subject. Appointments for one-to-one tutoring must be made a day in advance through our online scheduling program TutorTrac at www.ipfw.edu/casa. Drop-in tutoring is offered for math and some science classes, and drop-in sessions allow the students to "stop by" and have a question answered. The current schedule for drop-in tutoring is available on the web at www.ipfw.edu/casa/tutoring/options.shtml on bulletin boards outside the Spot and with the Spot secretary.

The Spot Learning Center offers information concerning study skills through PowerPoints, CDs, videos, and computer programs. There is a speed reading program on one of the computers that students may access any time the Spot is open. The Spot has many handouts on subjects including learning styles, test taking tips, how to stop procrastination, text anxiety and others.

37. Student Exchange Program

The National Student Exchange (NSE) program (Kettler 109, 260-481- 6595) allows eligible IPFW students to spend a semester or year studying at one of approximately 200 different universities and colleges in the United States, its territories, and Canada. The NSE program broadens students' cultural and educational experiences.

Participating students pay regular tuition fees to IPFW and have access to regular IPFW financial aid. While credits earned on exchange are recorded as resident credit toward the IPFW degree, exchange grades are not calculated in the IPFW grade-point average. Go to www.ipfw.edu/mac to schedule an appointment or go to www.ipfw.edu/nse for more information.

38. Student Handbook and Planner

A student handbook and planner is published each fall semester to inform students of the services, programs, and activities available at IPFW. It also contains important information on university policies and the Code of Student Rights, Responsibilities, and Conduct. The handbook is available at the Kettler Information Desk, the dean of students office (Walb 111), the bookstore, and other campus locations.

39. Student Life and Organizations

The Student Life office (Walb 115, 260-481-6609) promotes extracurricular and co-curricular programs that complement and enhance each student's academic experience and personal development. In addition, Student Life serves as the planning resource for over 100 student organization, offers leadership training, coordinates the new student orientation program (SOAR), the Freshmen Mentoring program, and the Co-Curricular Transcript program. Additional information is available in the *Student Handbook* or at the Student Life office and on the Internet at www.ipfw.edu/stulife.

40. Student Technology Education Programs (STEPS)

STEPS is a program of free technology workshops offered by Information Technology (IT) Services and CASA. Workshop times are posted on our website <https://www.ipfw.edu/casa/STEPS/> and are also available in computer labs and in the Spot. No reservations are needed. Presently, the following computer application workshops are offered: PowerPoint, Endnote, Word, Email, and Web Design, e-Learning, Setting up an APA or MLA Paper, and Research Using the Web. Instructors may request a workshop to be given to their entire class. For more information call CASA 260-481-6069.

41. Supplemental Instruction

Supplemental Instruction (SI), is designed to assist with selected difficult courses, and consists of special, regularly scheduled study groups with trained leaders. The classes can include biology, chemistry, computer science, math and psychology, and others. SI begins the first week of the term. Usually the instructor of the class will announce the availability of SI the first day of class. Sessions are open to all students. Generally, students who attend SI regularly attain a grade one half to one full letter grade higher than those students who do not attend SI. The SI director can give you specifics, but SI students who attend at least five times pass their classes with an A, B or C 80% of the time while the non-SI rate is 60%. Even if students aren't specifically paired with an SI course, they can attend SI sessions that may be helpful to them, for example, any Math 153 student can attend SI for Math 153 even though it is assigned to a different instructor.

Check our website for available SI sessions <https://ipfw.edu/casa/si/information.shtml>

42. Testing Services

Testing Services, available in Kettler 232, include IPFW placement tests (English, mathematics, reading, and foreign languages), the Institutional SAT, national tests (CPA, CLEP, LSAT, MAT, PRAXIS, and SAT), correspondence-study examinations, career-assessment inventories, and board and certification exams for dental hygiene and dental assisting.

Placement Tests Students admitted to IPFW must follow the writing guided self-placement process and take the math placement test before registering for any class.

Transfer and/or nondegree students who have taken English composition and/or math at another college should check with their IPFW academic advisor about placement requirements. Placement test results are valid for two years from the date the exams are taken. Modern Foreign Language placement exams in Spanish, German, and French are also available. Contact IPFW Testing Services (Kettler 232, 260-481-6600 for an appointment. For information regarding the guided self-placement writing exam, please contact the English and Linguistics Department at 260-481-6841.

43. Transcripts and Academic Records

The Office of the Registrar (Kettler 107) can provide official transcripts for students who have been enrolled at IPFW or any other IU or Purdue campus.

Copies of academic records (unofficial transcripts) for IPFW students are available from the registrar's office (Kettler 107).

44. Tutorial and Study-Skills Assistance

The Center for Academic Support and Advancement (CASA) (Kettler G23, 260-481-6817) assists students who want to improve their academic and study skills, need tutorial help in regular college courses, or would welcome advice on returning to college after a long absence from the classroom. It oversees a peer tutoring program in The SPOT, Kettler G21, (260-481-5419) that offers free individual appointments and regularly scheduled drop-in sessions. For appointments, sign up online at www.ipfw.edu/casa. CASA also has English-as-a-second-language materials, the Supplemental Instruction program, the First Year Experience program, and the IPFW Writing Center (Kettler G19, 260-481-5740).

45. Veterans' Services

The IPFW Veteran's Services coordinator provides educational support services for veterans of the U.S. military.

Veterans' benefits information and counseling for first-time, continuing, or transfer students are available from the VA-benefits certifying official in the registrar's office, Kettler 107, 260-481-6126. If you are receiving veterans' benefits, certification of your enrollment status is required each semester and should be requested at the registrar's office.

46. Voter Registration

Recent changes in the 1998 reauthorization of the U.S. Higher Education Act require colleges and universities to make available voter registration forms to all enrolled students. Any student not registered to vote may obtain an Indiana Mail-In Voter Registration Application (VRG-7) form, which is available at convenient locations throughout the campus. Please visit the Office of the Registrar's Web site, www.ipfw.edu/registrar and click on Voter Registration for more information.

The forms will be available at:

- Bursar Office - Kettler Hall
- Diversity and Multicultural Affairs - Walb Union
- Financial Aid Office - Kettler Hall
- Office of the Registrar - Kettler Hall
- Office of the Dean of Students - Walb Union
- Gates Sports Center
- Information Center - Kettler Hall Lobby
- Walb Information Desk - Lobby
- All School Dean's Offices

To be eligible to vote in Indiana, you must

- be a citizen of the United States
- be at least 18 years old on the day of the next general or municipal election
- have lived in your Indiana precinct for at least 30 days before the next election, and
- not currently be in prison after being convicted of a crime.

47. Women & Returning Adults

Located in the Office of Diversity and Multicultural Affairs, (Walb 118, 260-481-6608)

Mission Statement: The office of Women & Returning Adults serves as an advocate for women and nontraditional students by providing academic, financial and personal assistance while simultaneously familiarizing them with the network of services available on campus and in the community.

Special ongoing efforts designed to meet the needs of these students includes:

- Individual appointments
- Social and educational workshops - students with families series
- Scholarships for nontraditional students and women
- Newsletter
- Omicron-Psi Honor Society for adult students
- Campus and community resource information and referrals.

48. Writing Center

The Writing Center (Kettler G19, 260-481-5740) serves students, faculty, and staff with any university-related writing project in any discipline. The center's mission is to help all writers produce clear writing appropriate to their audiences. Knowledgeable consultants help writers brainstorm, focus, organize, and develop their ideas as well as learn how to better cite sources and revise and proofread their own drafts.

For free 25- or 50-minute, one-to-one or small group appointments, students sign up through TutorTrac (www.ipfw.edu/casa/wc). Arrangements for other services are made with the Coordinator at 260-481-6893 or schwartzm@ipfw.edu. For example, students make arrangements for large group project assistance or presentations (5 or more participants) and faculty and staff can make appointments to discuss their own or their students' writing. Students may also, without an appointment: (1) drop in for quick writing help, (2) use the open lab computers in Kettler G19 to write their papers, and (3) use the Writing Center's library of resources about writing.

For online consulting and further information, visit the Web site at www.ipfw.edu/casa/wc.

Writing Center hours: Monday-Thursday 10 a.m.-6 p.m.; Friday 10 a.m.-2 p.m.; and Sunday 1-5 p.m.

Part 8: Regulations, Policies, Rights, & Responsibilities

Click on a link to be taken to the entry below.

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5. Special Credit, Credit for Military Service, and Excess Undergraduate Credit
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IPFW Policies

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Academic Regulations

[^ TOP](#)

The following academic regulations were in effect for all undergraduate students at the time of printing. Changes go into effect periodically and are published in the *Schedule of Classes*. The academic regulations are arranged as follows:

1. Definitions

[^ TOP](#)

Certain terms have very specific meanings in these regulations. These terms are defined as follows:

Academic record Each student's IPFW cumulative record as maintained by the registrar in accordance with these academic regulations. Your IPFW academic record is the sole basis upon which all questions relating to such matters as grades, graduation requirements, academic standing, and scholastic recognition are resolved. Since official transcripts are produced using Indiana University and Purdue University procedures, your official transcript may, as noted in these regulations, vary somewhat from your IPFW academic record.

Credit The semester hour, often also called "credit hour" or "hour." Credit can be resident credit or transfer credit, as described below:

Resident credit: credit earned at IPFW or at another campus of the university through which you are enrolled at IPFW. There are two types of resident credit - course credit and special credit. Each is defined as follows:

Course credit: resident credit you earn on the basis of your enrollment in and satisfactory completion of courses.

Special credit: resident credit awarded by IPFW and based on factors other than your enrollment in and satisfactory completion of courses. There are three types of special credit:

Credit by examination: credit awarded on the basis of your achievement on a divisional or departmental proficiency examination.

Division/department credit: credit for a course offered by a division/department and granted on the basis of substantially equivalent experience. Only the director/chair of the division/department that offers the course is authorized to award this type of credit.

Achievement credit: credit granted on the basis of your achievement on a nationally administered college-level examination.

Transfer (nonresident) credit: Credit earned from another university (other than IPFW or another campus of the university through which you are enrolled at IPFW). Transfer credits are evaluated by Admissions and accepted as

transfer credit if completed at a regionally accredited institution with a grade of C- or better. Designations of plus and minus that accompany these grades will be disregarded in the evaluation of this credit.

Credit accepted as transfer credit will be equated to IPFW course numbers (or classified as "undistributed" if not equivalent to IPFW courses), and posted to your academic record at the time you matriculate or re-enter IPFW. The academic-record entry includes the name of the transfer institution, the years you attended, and the individual courses accepted for transfer. Your IPFW college/school/division or department determines how credit earned at other institutions and accepted by IPFW applies to your plan of study, and the dean/director or chair of your IPFW college/school/division or department may request an adjustment of transfer-course equivalencies.

Student classification: a system for classifying undergraduate students who have been regularly admitted to IPFW. Classification is determined by your advisor, and should reflect the credits you have accumulated or your progress toward completing the specific requirements of the degree program in which you are enrolled. When your classification is being determined for a future academic session, your advisor will also include courses and credits that you expect to complete by the time that session begins.

Classification Credits Completed Toward Degree

Freshman	Normally fewer than 30
Sophomore	Normally 30-59
Junior	Normally 60-89
Senior	Normally 90 or more

The registrar may establish additional classifications to serve IPFW's record-keeping needs. Thus, your official transcript may show somewhat different codes.

Beginning student: a student enrolling in college courses for the first time, or a student who has completed a small number of credits while in a temporary admission status, most often while still a high school student.

Advanced placement: the admission of students to courses beyond the first course or courses in an established sequence, but without granting credit for earlier courses in the sequence.

Substitution: the replacement of a course required in a program with another course specified by the college/school/division or department that established the requirement.

Excusing: the replacement of a course required in a program with an equal number of credits from other courses not specified as "required." Such an excuse requires approval of the school/ division or department that established the course requirement.

Work not scheduled for a regular fall or spring semester: course work offered during a summer session or during a period of time that differs from a regular 16-week semester, and that is equivalent in content, contact hours, and credit value to course work offered during a regular semester. Because the length of the course differs from the regular semester, all deadlines and time periods will be prorated.

Intensive course: a course that meets for extended class times but for fewer weeks than the course would meet in a standard summer session.

Pass/not-pass option: an enrollment option that generally limits course grades to P (pass) and NP (not-pass). You may use the option to take only elective courses with limited concern for the grade. You may not elect this option for more than 20 percent of the credits required for graduation or in courses for which you have already earned a grade. Under the P/NP option, Indiana University students who earn a grade of D or F have that grade recorded on their official transcripts. Purdue University students who earn a grade of D or F have a grade of N recorded on their official transcripts.

Auditor: a student who enrolls in a course, attends class, pays full fees, but does not receive a grade or credit for the course.

Cheating: dishonesty of any kind with respect to examinations, course assignments, or alteration of records.

Plagiarism: a form of cheating in which the work of someone else is offered as one's own. The language or ideas thus taken from another may range from isolated formula, sentences, or paragraphs, to entire articles copied from printed sources, speeches, software, or the work of other students.

Grade-point average (GPA): a numerical calculation or report of grade averages. IPFW, Indiana University, and Purdue University GPAs are based on a four-point system with grades of A equated to 4.00 points, grades of F equated to 0.0 points, and other grades scaled accordingly (see 11. Grades).

NOTE: Prior to June 1993, Purdue University transcripts and related Purdue University records were computed on a six point scale (A = 6.00) rather than the four-point scale (A = 4.00) used by IU and IPFW. Since June 1993, all IU, Purdue, and IPFW GPAs are computed using the same four-point scale (A = 4.00).

2. English Language Proficiency

The language of instruction at IPFW is English. Therefore, your ability to read, write, speak, and understand English is vital to your academic success.

Prior to admission, the Admissions office shall determine which prospective undergraduate students have a native language other than English. All students whose native language is not English must submit proof of English proficiency. The most common way of demonstrating English proficiency is through test scores on standardized exams, such as TOEFL, IELTS, and the Michigan Test. Other standardized and national exams may be considered as proof of English proficiency; the department of English and Linguistics, in consultation with the Admissions office and the office of International Student Services will determine the admissibility of these exams on a case-by-case basis.

All such students who do not have transfer credit for an English composition course that carries credit toward graduation shall be identified as ESL students and shall be required to submit scores on the TOEFL or an equivalent test approved by the department of English and Linguistics.

ESL students shall be admitted with the condition that they achieve appropriate competency levels in English composition.

Based upon TOEFL or equivalent test scores, the Department of English and Linguistics shall determine which ESL students need ESL instruction. Students who are found to be exempt from ESL course requirements shall be subject to the regular English placement-testing and course-completion requirements described in these regulations. Other ESL students shall:

1. Be admitted only to the Mastodon Advising Center unless they score the equivalent of 550 or above on the TOEFL-Paper, 79 or above on the TOEFL-Internet, 6.5 or above on the IELTS, or 80 and above on the Michigan Test and meet the admission requirements of a degree-granting academic unit. Students admitted in this fashion to the Mastodon Advising Center shall not be eligible for admission to another academic unit until they have completed ESL-related requirements.
2. Enroll in the appropriate ESL course each semester until the requirement is satisfied.
3. Complete the prescribed series of ESL courses within their first 36 credits at IPFW.

The Mastodon Advising Center shall have authority to alter any student's registration if these requirements are not being met.

3. Advanced Credit

You can establish advanced credit in any of five ways:

College Board advanced-placement program. You can establish college credit based on an exam taken after completion of a high school advanced-placement course. The test score necessary to support an award of credit varies depending on the test subject. Specific information is available from IPFW Admissions or at www.ipfw.edu/admissions/credits/ap.shtm.

College-Level Examination Program (CLEP). This program evaluates nontraditional college-level education.

A guide to CLEP credit available at IPFW can be obtained from the Admissions office or at www.ipfw.edu/admissions/credits/ap.shtm. No credit is awarded for General Examination performance.

Education while in U.S. military service. If you are a Purdue University or Indiana University student who (1) took foreign-language courses in service schools; (2) took courses from the Community College of the Air Force; or (3) are an Indiana University student who (a) completed courses that appear in the Evaluation of Educational Experience in the Armed Forces (b) took DANTES examinations, and/or (c) completed Air Force Flight School; you may be eligible for credit. Twelve credits are granted for completion of Officers' Candidate School. Each college/school/division determines whether credit for military service is applicable to the degrees it sponsors.

Directed Credit/Credit by Examination. For information about "testing out" of courses, see 5. *Special Credit, Credit for Military Service, and Excess Undergraduate Credit*.

Modern Foreign Languages Placement Test. If you begin foreign-language study in a second semester or higher course in French, German, or Spanish, you may be eligible for special credit for the courses below your placement level. You must apply for this credit through the Department of International Language and Culture Studies (CM 267, 481-6836); it is not granted automatically.

4. Transfer Credit

For general limits on credit transfer, see 14. Degrees.

To transfer credits to IPFW, you must request that every college or university you have attended send an official transcript of your work to IPFW Admissions. IPFW accepts credits only from academic programs at institutions accredited by regional accrediting associations and only for courses in which you earned grades of C- or better. Courses from institutions not holding regional accreditation may be reviewed by the academic department in which the course is taught. Specific IPFW degree programs may impose additional criteria. Grades do not transfer.

Changing between IPFW programs. To change from one IPFW academic program to another, you must complete the appropriate forms and secure the approval of the IPFW college/school/division offering the program to which you want to change. If the change affects your university affiliation (IU or Purdue), the registrar will notify Admissions, which will transfer all of your previously earned IPFW credits to the records system of your new university.

If you are a re-entering student who has not enrolled at IPFW during the previous 12 months, or if you are returning to IPFW after having attended another institution, you must specify your intended academic program on the appropriate re-entry or transfer-admission form. You must then submit this completed form to Admissions for evaluation.

Credit transfer between IPFW programs. When you change from one IPFW degree or certificate program to another, the college/school/division to which you are transferring will report to the registrar the status of every course you have taken. Each course you have completed, regardless of the grade you earned, will be classified into one of the following two categories:

- courses that are required for, or applicable to, your new program or which are substantially equivalent to, and are acceptable as, substitutes for such required courses.
- courses that are not applicable to your new program.

Grades you have earned in any courses that can satisfy a degree requirement, other than a "free elective," may not be deleted from the calculation of your graduation GPA.

5. Special Credit, Credit for Military Service, and Excess

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TOP

Undergraduate Credit

Credit by division/department examination. Opportunities for earning undergraduate credit by division/department examination are encouraged in order to expedite the education of qualified students. Toward this end, each academic division/department establishes procedures to consider candidates and to administer and grade such examinations. Each division/department also keeps a list of the principal courses available for credit by examination and test schedules if known.

You may request an examination for credit for a course if the course is available for credit by examination and if no grade in the course other than a grade of W or NC has been awarded. The examination will be at least as comprehensive as those given in the course, and will be graded satisfactory (performance comparable to that expected of a student who receives an A, B, or C in the course), or unsatisfactory. The registrar will record results of satisfactory performance on your academic record; no academic record entry will be made for unsatisfactory performance.

Achievement credit. Credit or transfer credit for nationally administered examinations (except the International Baccalaureate Program) will be awarded only after approval by the IPFW division/department that offers courses in the subject area.

For participants in the International Baccalaureate Program, an award of 3-8 credits will be made for each high-level examination passed with a score of 4 or above. IPFW Admissions will award undistributed credit in the appropriate disciplines until specific credit equivalencies are established by IPFW departments. No credit will be awarded for performance on subsidiary-level exams.

Credit for military service. Each college/school/division determines whether credit for participation in military service may be applied toward a degree.

Excess undergraduate credit. A senior with a GPA of 3.00 or better may, with written permission from both an authorized graduate advisor and the instructor(s) involved, enroll in up to 9 credits in excess of the requirements for graduation, in courses intended for use in a graduate program. Permission, if given, will be noted on forms supplied by the registrar, who shall make a transcript notation of the special status of these credits. Instructors will impose graduate-level standards in these courses.

6. Placement Tests

Placement procedures. Students should complete the following procedures as soon as possible after admission to IPFW. Students completing these procedures shall be notified of the test results and their implications in a timely fashion.

English. A regularly admitted beginning student is allowed to register for classes only after completing the appropriate placement procedure. Any other student is allowed to register for classes beyond the session in which the first 12 credits are completed at IPFW only if the student has (1) completed the appropriate procedures; or (2) established credit in an entry-level English course.

Mathematics. A regularly admitted beginning student is allowed to register for classes only after completing the appropriate placement procedure. Any other student is allowed to register for classes beyond the session in which the first 12 credits are completed at IPFW only if the student has (1) completed the appropriate procedures; or (2) established credit in an entry-level mathematics course.

Students who place into developmental mathematics must complete the appropriate developmental course(s) in their first 24 credits of IPFW course work, with the exception of developmental mathematics for those students enrolled in a certificate or associate degree program that does not require mathematics.

Reading. a regular admitted beginning student is allowed to register for classes only after submitting one of the following:

1. SAT test score above 450 on the verbal test
2. ACT test above 19 on the individual reading test
3. Scoring above the lowest 15 percentile (determined by national norms) on the IPFW placement test.

Students who do not meet at least one of these requirements will be required to complete a reading course as specified by the Department of English and Linguistics and approved by the College of Arts and Sciences during one of the student's first two enrollment periods.

Foreign language. If you studied French, German, or Spanish for two or more years in high school and wish to continue to study that language, you must enroll in the appropriate 113 course, unless you graduated from high school five years or more prior to enrolling at IPFW. The 113 course is equivalent to the second semester of the first year, but incorporates a review of what is studied in French, German, or Spanish 111. No placement test is required for enrollment in 113. Students who graduated from high school five years or more prior to enrolling at IPFW may start their foreign language over by enrolling in 111, or they may take a placement test to determine whether they might be successful in 113.

If you completed three or more years of high school French, German, or Spanish, you are urged to take the foreign-language placement test in order to determine whether you can place higher than 113. Call 260-481-6600 to schedule a free foreign language test.

If you studied French, German, or Spanish at a college or university and have transfer credits, please contact the Department of International Language Cultural Studies (CM 267, 260-481-6836) before enrolling in additional classes in that language.

English as a second language. If you have been designated as an ESL student, consult 2. English Language Proficiency.

7. Registration and Course Assignment

Registration procedures. You must register for courses in accordance with procedures and guidelines prescribed by the registrar.

Your initial registration for each term must occur according to the timetables for registration established for each semester/session and published in the Schedule of Classes. In most cases, you will register for classes at your college/school/division or department office, the registrar's office, or via the Web registration system.

Academic load. The following maximums apply to your enrollment at IPFW:

Limit with special permission. Your academic load may not exceed 18 credits in a regular semester or 8 credits in a summer session unless unusual circumstances exist and you have been granted special permission by your academic advisor.

Absolute maximum in any academic session or intensive course. You will not be allowed to register for a class, or combination of classes, that generates more than 1.5 credits per week. You will not be allowed to register for more than one intensive course at a time. Courses for which you register as an auditor are included in the calculation of your academic load.

Enrollment status. For most purposes, undergraduate students are considered to be full-time students when enrolled in 12 or more credits during a semester and part-time students when enrolled in 11 or fewer credits during a semester.

Course prerequisites and corequisites. Before you begin a course, you must have satisfied all prerequisites and corequisites or secured the instructor's or sponsoring division/department permission. At the request of the instructor or the division/department through which a course is offered, the registrar may withdraw you from a course for which you have not satisfied all prerequisites and corequisites.

Auditing. You may enroll as an auditor by noting "Auditor" (A) in the appropriate space on your registration form, and by completing the normal registration procedures established by your division/department. Regular course fees will be assessed. You may not enroll as an auditor if you have been dismissed from IPFW.

You will be assigned a grade of W or NC and will not receive academic credit for a course in which you enrolled as an auditor. However, under the rules of a division/department examination, you may later be allowed to earn credit for a course you have audited.

Schedule revisions and late registration. After your initial registration, you may revise your schedule in accordance with the policies listed below. In all cases, you must submit the completed schedule-revision (drop/add) form with appropriate signatures to your division/department or the registrar's office. All schedules and deadlines are prorated for courses not meeting for an entire 16-week semester. An academic advisor's approval may be required to process a course addition or withdrawal at the registrar's office.

Addition of a course. You may add a course after your initial registration by submitting a completed schedule-revision (drop/add) form with appropriate signatures to your division/department, to the registrar's office, or via the Web registration system.

<i>Weeks</i>	<i>Restrictions</i>
Through Week 1 of classes	College/school/division policies determine whether an academic advisor's approval is required.
Weeks 2-4	Approval of the instructor is required. college/school/division policies determine whether an academic advisor's approval is required.
Weeks 5-9	Approval of the instructor and of your dean or division director is required. School policies determine whether an academic advisor's approval is required. Approval will normally be given only when extenuating circumstances are involved.
Weeks 10-16	Courses cannot normally be added during this time.

Withdrawal from a course. Subject to the time limits below - and in the absence of any allegation that you are guilty of academic dishonesty in the course - you may officially withdraw from a course by presenting a schedule-revision (drop/add) form with appropriate signatures to your division/department, to the registrar's office, or via the Web registration system.

<i>Weeks</i>	<i>Restrictions</i>
Through Week 4 of classes	College/school/division policies determine of classes whether an academic advisor's approval is required; the course is not recorded on your record.
Weeks 5-9	Approval of the instructor is required. college/school/division policies determine whether an academic advisor's approval is required.
Weeks 10-16	Approval of the instructor and of your dean or division director is required. School policies determine whether an academic advisor's approval is required. Approval will normally be given only when extenuating circumstances are involved.

During Weeks 10-16, a course may be dropped and a grade of W assigned if you receive approval of your academic advisor and your dean/division director, after the latter has consulted with the instructor. Such drops will not be approved if sought because of your poor performance in the course.

After the end of the Week 16, a course may be dropped only by following the change-of-grade procedure.

Change of Pass/Not-Pass (P/NP) optionn. Prior to the end of the fourth week of an academic semester (or equivalent period during a summer session), you may add or remove the P/NP option for a course by obtaining the signature of an academic advisor next to the appropriate notation on the schedule-revision (drop/add) form, and by processing the form in the prescribed manner.

Change of Auditing option. Prior to the end of the fourth week of an academic semester (or equivalent period during a summer session), you may change from audit to credit status by obtaining the signature of an academic advisor next to the appropriate notation on the schedule-revision (drop/add) form, and by processing the form in the prescribed manner. Prior to the end of the ninth week of an academic semester (or equivalent period during a summer session), you may change from credit to audit status in the manner specified above.

NOTE: All deadlines and time periods will be prorated for courses offered during a period of time that differs from a regular 16-week semester.

Withdrawal from the university. Withdrawal from the university is accomplished by withdrawing from each course in which you are enrolled.

Withdrawal for military service. Any student called to active military duty may present a copy of their military service orders and (1) withdraw from all courses and receive a 100 percent refund of tuition and fees at any time during the semester through the end of final examinations or (2) with the permission of each instructor, receive an Incomplete or final grade in the courses taken. Such requests and documentation may be presented by the student or other responsible party who has the student's permission to make the request. Refunds of fees will not be made if the student receives a grade and credit for the course, and all refunds will be adjusted as required by financial aid regulations. If a withdrawal is processed after the fourth week of classes, the grade of W will be assigned.

Withdrawal for personal circumstances. Students who seek to withdraw from IPFW after the ninth week of classes based on personal circumstances should contact the dean of students for guidance about the process.

8. Attendance

You may not attend a class (1) before completing official registration procedures, (2) after officially withdrawing from the class, or (3) after your registration has been canceled.

You are expected to attend every meeting of the classes in which you are registered. Work missed during absences may be made up if permitted by the instructor. At the beginning of the academic session, each instructor will provide a clear statement to all students regarding his or her policy for handling absences.

If you must report your class attendance in order to satisfy requirements of financial-aid sponsors, you must present the sponsor's certification form to each of your instructors. Each instructor will certify your attendance by completing the form. Unless you have made a prior agreement with your instructor, he or she will not be obligated to certify your attendance for more than the most recent class.

Discontinuing class attendance and not fulfilling course requirements is regarded as an unauthorized withdrawal and will result in your receiving a grade of F.

9. Academic Honesty

Policy. Academic honesty is expected of all students. You are responsible for knowing how to maintain academic honesty and for abstaining from cheating, the appearance of cheating, and permitting or assisting in another's cheating.

Your instructor is responsible for fostering the intellectual honesty as well as the intellectual development of students, and for applying methods of teaching, examination, and assignments that discourage student dishonesty. If necessary, your instructor will explain clearly any specialized meanings of cheating and plagiarism as they apply to a specific course.

Your instructor will thoroughly investigate signs of academic dishonesty, take appropriate actions, and report such activity properly to prevent repeated offenses and to ensure equity.

Procedures. An instructor who has evidence of cheating will initiate a process to determine guilt or innocence and the penalty, if any, to be imposed.

During an informal conference held within 10 class days of discovering the alleged cheating, your instructor will inform you of charges and evidence and allow you to present a defense. Your instructor will make an initial determination after this conference. You may be assigned a grade of Incomplete (I) if the matter cannot be fully resolved before course grades are due in the registrar's office.

Reporting. During the period in which you are permitted to drop courses, the instructor will inform the registrar promptly of any allegation of cheating, so that you cannot withdraw from the course. The instructor who makes an initial finding that academic dishonesty has been practiced will impose an academic sanction. Then, within 10 class days, the instructor will supply a written report to you, the chair of your department, the dean or director of your school or division, and the dean of students. The report will summarize the evidence and penalties assessed.

Appeal. If your course grade is affected by the penalty, you have the right to appeal the penalty imposed by an instructor in accordance with the grade-appeals policy (see 18. Grade Appeals).

10. Final Examinations

Next-to-last week. No instructor may schedule an examination - comprehensive or noncomprehensive - except for laboratory and practicum courses, during the week preceding the last week of a fall or spring semester.

Final week. With the exception of courses classified as individual instruction, clinic, studio, practice teaching, or research and those offered for 0 credits, each class is expected to meet for a two-hour session during the last week of each fall or spring semester. The two-hour session is to be used for (1) a final examination; (2) a last, noncomprehensive examination; (3) submission of an out-of-class examination or assignments; or (4) a regular class meeting.

Conflicts. If you (1) are scheduled to take more than two final examinations in one day, (2) have conflicting final examinations, or (3) are scheduled to take a state, national, or professional licensing examination, you may contact the instructors involved prior to the last week of a fall or spring semester to obtain appropriate rescheduling. If you and the instructors cannot agree upon a rescheduling, the vice chancellor for academic affairs shall investigate and issue a binding schedule.

Absences. If you miss a final examination because of an emergency, you must contact the instructor as soon as possible. If you miss a final examination, you may receive a grade of F for the course.

11. Grades

Basis of grades. Your instructor is responsible for explaining to you, preferably in writing at the beginning of an academic session, the course requirements and grading system to be used. You will be assigned a grade in each course at the close of the session. You are responsible for the completion of all required work in each course by the time of the

last scheduled class meeting or other deadline set by the instructor, unless you have officially withdrawn from the course, or unless you and the instructor have agreed that a grade of Incomplete (I) is warranted. Note: Plus/Minus grades may be assigned beginning fall 2008.

Semester Grades. The following grades may be assigned:

Grade		Grade Points
A+, A	Highest passing grade	4.0 x Semester Hours
A-		3.7 x Semester Hours
B+		3.3 x Semester Hours
B	Above-average passing grade	3.0 x Semester Hours
B-		2.7 x Semester Hours
C+		2.3 x Semester Hours
C	Average passing grade	2.0 x Semester Hours
C-		1.7 x Semester Hours
D+		1.3 x Semester Hours
D	Lowest passing grade	1.0 x Semester Hours
D-		0.7 x Semester Hours
F	Failure or unauthorized discontinuance of class attendance; no credit.	
I	Incomplete. A temporary record of passing work that (1) was interrupted by circumstances beyond the student's control or (2) represents satisfactory work-in-progress in an independent-study or self-paced course.	
IF	Unremoved incomplete, Failing. Recorded for failure to achieve a permanent grade by the deadline stated in these regulations. Indiana University students who receive this grade will have a grade of F recorded on official transcripts.	
NC	Completion of the course as an auditor; carries no credit.	
NP	Not passing grade when enrolled under the P/NP enrollment option. Purdue University students who receive this grade will have a grade of N recorded on official transcripts.	
P	Passing grade. Under the P/NP option, equivalent to a grade of A+, A, A-, B+, B, B-, C+, C or C-.	
S	Satisfactory, credit. Awarded by the registrar upon satisfactory performance in a course offered only on an S/F basis, or on a departmental/divisional examination, or another award of special credit, or completion of a 0-	

credit course. Purdue University students who receive this grade will have a grade of P recorded on official transcripts whenever the course involves one or more credits.

- W Withdrew. A record of the fact that the student officially withdrew from (dropped) a course or was administratively withdrawn from a course for nonpayment of fees after the end of the fourth week.

Pass/Not-Pass (P/NP) option. The P/NP grade option provides a limited opportunity for you to take "free electives" with minimal concern for grades you earn. You must fulfill the same requirements as others enrolled in courses for which you elect this alternative. Instructors are not advised that you have registered for their courses under this option.

Your use of this option is subject to the three general limitations listed below. However, your college/school/division or department may impose additional restrictions.

- You may not elect this option for courses that fulfill specific graduation requirements other than total number of credits (i.e., only for "free-elective" courses).
- You may not elect this option for more than 20 percent of the credits required for graduation.
- You may not elect this option for any course in which you have already earned a grade of A, B, C, D, or F.

If you earn a grade of A, B, or C under this option, it will be changed to a grade of P by the registrar and posted to your transcript. However, if you are enrolled at IPFW as an Indiana University student, grades of D or F that you earn under this option will be posted to your transcript without change. If you are enrolled at IPFW as a Purdue University student, grades of D or F which you earn under this option will be changed by the registrar to a grade of NP and will be posted to your official transcript as a grade of N. Grades of P and NP (or N) are not used in the computation of your GPA.

Incomplete. A grade of I may be granted to students (1) who are unable to complete specific course requirements for clearly unavoidable, nonacademic reasons (such as extended illness or relocation) and (2) whose work has been of passing quality up to that time. A grade of I will not be considered as an alternative to an anticipated low grade in a course. Certain IPFW schools/divisions or departments impose additional limitations on the use of I grades.

An instructor who reports a grade of I must provide the registrar's office with a form specifying (1) the reason for the incomplete, (2) the requirements for completing the course, (3) the grade earned for the course to date, and (4) the specific time limit, not to exceed one calendar year, allowed for completing the course.

An instructor may change the incomplete to a regular letter grade if requirements for completion of the course are not met within the time specified. Given extenuating circumstances, the initial time limit may be extended for a period not to exceed one additional calendar year if approved by the instructor and the instructor's dean/division director, and if the registrar's office is notified before the expiration of the original time limit.

The registrar's office changes the I to a grade of IF unless you graduate or remove the incomplete within the time allowed. If you are enrolled at IPFW as an Indiana University student and receive an IF grade, a grade of F is recorded on your official transcript. If you re-enroll in the same course while the I is still on your record, and the course is not repeatable for credit, the original grade of I remains on your official transcript.

If you transfer resident credit for a course in which you received an incomplete, you will have the grade of I recorded on your academic record for up to one calendar year from the date of admission to IPFW. At the end of this period, if you have not graduated or provided evidence that the incomplete has been replaced with a permanent grade, the registrar's office will change the incomplete to IF.

Final grade report. Your complete record for the session and your cumulative GPA are reported to you, your major department, and your college/school/division.

Changes of grade. An instructor who discovers within 30 days of the grade-processing deadline that a grade reported for you was in error, must promptly submit to the registrar a statement, countersigned by the instructor's department chair or division director, of the circumstances of the error and of the change to be incorporated in future GPAs. Correction of errors after this time requires the additional approval of the instructor's dean/director.

The registrar will inform you, the department chair/division director, and the dean of the change of grade.

You may seek a change of grade through the grade-appeals procedure (*see 18. Grade Appeals*).

You may retake any course. Unless the course is described in this *Bulletin* or its supplement as repeatable for credit, credit will be given only once for a repeated course, and only the most recent grade earned will be incorporated into graduation GPA calculations.

12. Grade-Point Averages

A grade-point average (GPA) is a weighted average of all credits for which a GPA-related grade (A, B, C, D, F, IF) has been assigned. The three GPAs used at IPFW are defined and computed (and rounded to two decimal places) as follows: Semester GPA is computed using only those credits for which you are assigned a GPA-related grade for the specified semester.

Cumulative GPA is computed using all credits for which you are assigned a GPA-related grade with the exception of credits earned in those courses that have been repeated and are not repeatable for credit. All credits earned at IPFW or at another campus of IU or Purdue for which a grade of A, B, C, D, F, or IF was assigned are applicable.

Graduation GPA is computed using credits for which you are assigned a GPA-related grade in only those courses that fulfill a graduation requirement with the exception of credits earned in those courses that have been repeated and are not repeatable for credit. If you are pursuing more than one degree program, your graduation GPA will be determined by the academic unit through which you register.

All applicable credits earned at IPFW or at another campus of IU or Purdue for which a GPA-related grade was assigned are included if they were received for courses that fulfill a graduation requirement.

Note: Prior to June 1993, Purdue University transcripts and related Purdue records were computed on a six-point scale, (A = 6.00) rather than the four-point scale (A = 4.00) used by IU and IPFW. Since June 1993, all IU, Purdue, and IPFW GPAs are computed using the same scale (A = 4.00).

13. Academic Standing

Good standing. For purposes of reports and communication to other institutions, and in the absence of any further qualifications of the term, you are considered in "good standing" unless you have been dismissed, suspended, or dropped from IPFW and not readmitted.

Academic recognition. At the conclusion of each fall or spring semester (but not any summer session), the registrar indicates which students are eligible for the following academic recognitions:

Semester Honors List for (1) having at least 6 credits included in the semester GPA, (2) achieving at least a 3.50 semester GPA, and (3) achieving at least a 2.00 graduation GPA.

Dean's List for (1) having at least 12 credits included in the graduation GPA, (2) having at least 6 credits included in the semester GPA, (3) achieving at least a 3.50 graduation GPA, and (d) achieving at least a 3.00 semester GPA.

If you have earned academic recognition for either of the two previous semesters, your achievements will be recognized at the annual Honors Convocation and appropriately noted on your academic records.

Recognition of completion of Honors Program. If you are certified by the Honors Program Council as having completed the requirements of the Honors Program, an appropriate academic record notation is made.

Academic probation, dismissal, and readmission. The following probation, dismissal, and readmission criteria are minimums for IPFW; academic units may set higher standards that become effective upon publication in the Bulletin or

its supplement. If you are dismissed from a program for failure to meet the higher standards imposed by an academic unit, you must be accepted into another program before registering for a subsequent academic session.

Probation. You are placed on probation and are so notified by the university whenever your semester or cumulative GPA at the end of any regular semester is less than the minimum standards specified in the following table:

GPA Levels for Probation

Class	Semester	Cumulative
Standing	GPA	GPA
Freshman	1.50	1.50
Sophomore	1.60	1.70
Junior	1.70	1.90
Senior	1.70	2.00

An appropriate notation will be made on your academic record. Any grade change will require recalculation of your probation status. You are removed from probation upon achieving the minimum semester and cumulative GPA in the above table.

Dismissal. If you are on probation, you will be notified of dismissal by the university if, at the end of any regular semester, you (1) earn failing grades in 6 or more credits for that semester or (2) do not meet the minimum cumulative GPA requirements in the following table:

GPA Levels for Dismissal

Class Standing	Cumulative GPA
Freshman	1.30
Sophomore	1.50
Junior	1.70
Senior	1.90

An appropriate notation will be made on your academic record. Any grade change will require recalculation of your dismissal status.

Readmission. If you have been dismissed from IPFW or any other campus of Indiana University or Purdue University, you may not enroll at IPFW until one fall or spring semester has passed. Thereafter, you may be readmitted according to the procedures specified by the IPFW college/school/division into which you are seeking readmission.

If you have been dismissed from IPFW with fewer than 12 credit hours attempted in courses with GPA-related grades since your admission or readmission, you may be eligible for immediate readmission to the division/department from which you were dismissed and be exempted from the procedures and fees normally associated with readmission.

All readmissions are into probationary status. An appropriate notation will be made on your academic record.

14. Degrees

Schools and divisions may impose stricter requirements than those listed in this section, but may not waive the following minimum standards. Provided these minimum standards are satisfied, adjustments to any degree requirement may be made by the unit establishing that requirement.

Degrees offered. For completion of undergraduate plans of study of at least 60 credits, associate degrees may be conferred. For completion of undergraduate plans of study of at least 120 credits, bachelor's degrees may be conferred.

Requirements for degrees. If you enter a degree, certificate, or premajor program, you will be required to fulfill the requirements published in the Bulletin (or its supplement or departmental regulation) current at the time of your most recent entry or re-entry into that program at IPFW. Only with the written acknowledgment of an academic advisor can you elect to fulfill the requirements in any subsequent *Bulletin* or supplement.

Any new requirement for a degree, certificate, or premajor program may not be imposed on currently enrolled students in these programs if it would increase the number of credits or the number of semesters required for completion of the program.

The college/school/division/department committee in charge of curriculum matters may refuse to accept as credit toward graduation any course that was completed 10 or more years previously. Former students will be notified of all such decisions upon re-entering or when the credit is determined to be unacceptable.

To earn any associate or bachelor's degree at IPFW, you must satisfy the following four requirements:

1. You must complete, by resident credit or transfer credit, the plan of study underlying the degree, including
 - For an associate degree, registration in and completion of at least 32 credits of resident course credit, including at least 15 credits in courses applicable to the major.
 - For a bachelor's degree, registration in and completion of at least 32 credits of resident course credit at the 200-level or above, including at least 15 credits at the 300-level or above in courses applicable to the major.
2. Normally, you must complete the entire final year at IPFW. However, with the approval of your college/school/division and if you have satisfied the resident credit requirement, you may complete the remaining requirements in another approved college or university.
3. You must establish a graduation GPA of 2.00 or better.
4. You must register, either in residence or absentia, as a candidate for the desired degree during the academic session immediately preceding its conferral.

Double majors and double degrees. The academic unit sponsoring your programs shall certify your completion of each degree and any second major that you may have completed.

Double major. If you complete all the requirements for more than one program, you will be awarded a degree with a double major if (1) the requirements are completed at the same time; (2) the programs are offered by the same school or division and the same university at IPFW; and (3) the programs lead to the same degree, where "the same degree" means a B.A. (IU or Purdue), B.F.A., B.S. (Purdue only), or a B.S.C., etc.

Double degree. If you complete all requirements for more than one program, you will be awarded two degrees if the above requirements for a double major are not satisfied, except that Purdue University students who complete requirements for a second major leading to the same degree as originally earned shall have this major noted on their transcripts but shall not receive a second degree.

Graduation with distinction. To be a candidate for the bachelor's degree with distinction, you must have a minimum of 65 resident credits included in the computation of your graduation GPA. To be a candidate for an associate degree with distinction, you must have a minimum of 35 resident credits included in the computation of your graduation GPA. The required GPA, calculated each spring as outlined below, also applies to degrees for the following summer sessions and fall semester.

In each school or division, the minimum graduation GPA for graduation with highest distinction from a bachelor's-degree program shall be at least 3.80 (A = 4.00), but never less than the 97th percentile of the graduation GPA of the school or division's graduates.

In each school or division, the minimum graduation GPA for graduation with distinction from a bachelor's-degree program shall be at least 3.50 (A = 4.00), but never less than the 90th percentile of the graduation GPA of the school or division's graduates.

Also in each school or division, the requirements for graduation with highest distinction or with distinction from an associate degree program shall also be separately calculated as outlined above for bachelor's-degree programs.

Conferring of degrees. Degrees may be granted at the close of each academic session.

15. Minors

You may earn a minor by providing your division/department verification of your acceptance into the minor program, a statement of the minor-program requirements, and by successfully completing those requirements. You may choose any set of minor-program requirements in effect since your most recent admission or re-entry into IPFW. Completion of any minor requires a minimum of 12 credits, including at least 6 resident credits at the 200 level or above. Your division/department will certify your completion of the minor requirements as your degree certification is being processed.

Concurrent with the completion of your degree requirements, the registrar will make an appropriate entry on your transcript to denote completion of the minor. No entry will be made on your transcript if the minor is not completed by the time you are certified for graduation.

16. Transcripts

If your record is not encumbered for any reasons described herein, you will (upon application to the registrar and payment of any prescribed fee) be entitled to receive an official transcript of your complete record, including any major(s) and minor(s).

Note: The registrar's office is the only university office authorized to issue official transcripts. All requests for these documents must be directed to that office.

17. Encumbrances

If you are in arrears to IPFW, you are not eligible to receive transcripts or diplomas. The clearance of all financial obligations by the Friday before Commencement will be essential for graduation. If you clear the obligation later, the diploma will be released.

18. Grade Appeals

The Grade Appeals Policy applies to all students enrolled at IPFW. It can be used by any student who has evidence or believes that evidence exists to show that a course grade was assigned or a similar evaluation was made as a result of prejudice, caprice, or other improper condition such as mechanical error.

In appealing, the student must support in writing the allegation that an improper decision has been made and must specify the remedy sought. The student should seek the assistance of the dean of students in pursuing the appeal. During an appeal, the burden of proof is on the student, except in the case of alleged academic dishonesty, where the instructor must support the allegation. The student may have an advisor or friend present during all meetings with faculty members, administrators, and/or committees; he or she may advise the student but may not speak for the student during the meetings.

Grades may be changed only by a university authority upon the decision of the Grade Appeals Subcommittee or by the instructor any time prior to the decision of the Grade Appeals Subcommittee.

Appeal Deadlines An appeal must be initiated no later than the fourth week of the fall or spring semester immediately following the session in which the grade was assigned. A final decision at each step must be reported within 30 calendar days of the filing of an appeal at that step, provided that this deadline falls within the regular academic year (fall or spring semester). If the deadline falls during the summer, the decision must be reported within 30 calendar days of the start of the fall semester. Each successive step in the appeals procedure must be initiated within three calendar weeks of the completion of the prior step.

Steps in the Process of a Grade Appeal

Step 1. *Course instructor*: The student makes an appointment with the instructor to discuss the matter. If the instructor is unavailable, the department or program chair shall authorize an extension of time or allow the student to proceed to Step 2. If the chair is unavailable, the dean of the college or school shall authorize the extension.

Step 2. *College/school/department/program*: If the matter has not been resolved at Step 1, the student makes an appointment with the chair of the department or program offering the course, who may make an informal attempt to resolve the appeal. If the appeal is not resolved informally, the chair will direct the student procedurally in making an appeal to the department, school, or program committee. Only one committee shall hear the appeal in Step 2. The student filing an appeal shall have the opportunity to be heard in person by the committee.

Step 3. *Grade Appeals Subcommittee*: If the matter has not been resolved at Step 2, the student makes an appointment with the dean of students, who will direct the student procedurally in submitting the case to the Grade Appeals Subcommittee.

Department/College/School/Program Appeals Procedure Each department, college, school, or program will establish appeals procedures that provide for a committee of three or more faculty members responsible for hearing grade appeals related to courses listed or administered by that department/school/program if those appeals have not been satisfactorily resolved between the student and the instructor or informally by the department chair. The procedures established by each department, college, school, or program shall provide for each case to be heard by only one such committee. The procedure shall provide the opportunity for the student to be heard in person and for the decision to be reported in writing to the student and the instructor. A copy of each unit's procedures will be given to the vice chancellor for academic affairs, to the dean of students, and to students, upon request.

Grade Appeals Subcommittee This subcommittee shall consist of nine members elected from among the Voting Faculty according to procedures specified in the Bylaws of the Senate.

Before hearing the details of a case, the subcommittee will decide by majority vote whether to consider the appeal and will report its decision in writing within 30 calendar days. The bases for a decision to consider an appeal may include (but not be limited to) a finding that (1) improper procedures have been followed by university employees at earlier steps of the appeal; (2) new information is present; or (3) the instructor has declined to accept the department, school, or program committee's recommendation.

No member of the subcommittee may take part in an appeal involving a course or instructor from the member's department or program. Members should also recuse themselves from cases in which they have potential conflicts of interest, personal involvement, schedules that will interfere with hearing the appeal in a timely manner, or other disqualifying causes. From those members remaining, the chair will elect the five-person hearing panel. The panel members will elect a chair who will be responsible for making arrangements related to the case.

If the case is to be heard, the hearing will take place within 30 days of the decision to hear the appeal, or within 30 days of the start of the fall semester, whichever is applicable. Each member of the panel will vote on whether the appeal is valid, and if so, on what remedy should be provided. If the panel, by majority vote, finds in favor of changing a grade, the chair shall report this finding to the registrar and to the parties listed below. The decision of the panel is binding on all parties and may not be appealed.

Reporting of Subcommittee and Panel Decisions The subcommittee and each panel shall report its finding and actions to the student; the department, school, or program from which the appeal came; the instructor; the chair of the

student's department; the dean or director of the student's school or division; the dean of students; and (in the case of a panel decision) the chair of the Grade Appeals Subcommittee.

IPFW Policies

The following IPFW policies were in effect for all undergraduate students at the time of printing. Changes go into effect periodically and are published in the *Schedule of Classes*. The policies are arranged as follows:

1. Admission

You must be admitted to IPFW before you are eligible to register for classes. Admission applications may be obtained from the Admissions office (Kettler 111, 260-481-6812 or 800-324-IPFW) or online at www.ipfw.edu/admissions. After submitting all necessary information, you may be admitted to Indiana University or to Purdue University based upon the degree program you have selected. IPFW admissions counselors are available to help with your selection. Please call the Admissions office for a personal appointment.

University requirements for admission are established by the trustees. Program-specific admission requirements, in addition to those established by the trustees, may be imposed by schools/divisions and departments. Any such requirements become effective when published in the *Bulletin* or appropriate supplementary publications. Applicants should be aware that certain criminal convictions may result in ineligibility for admission to certain programs of study.

Basic skills. As an applicant for regular admission to IPFW, you should already possess the following basic-level skills in reading, writing, and mathematics:

Reading. You should be able to identify the main and supporting ideas in moderately complex texts, identify the authors' purposes, and evaluate the logic, accuracy, and value of their writing. You should be able to recognize implications, inferences, and assumptions and to integrate information from your experience or reading with new information.

Writing. You should be able to write short (500-700 words) argumentative and expository essays and should have some familiarity with research and documentation. Your essays should be clearly organized and demonstrate an ability to develop a thesis through argumentation and evidence. You should display no major errors in spelling, syntax, punctuation, and usage.

Mathematics. You should be able to demonstrate arithmetic numeracy and mastery of the content of a substantial first-year high school algebra course and a high school geometry course. You should be able to use problem-solving strategies and translate word problems into mathematical expression; to recognize relationships between variables in graphs; and to identify one-, two-, and three-dimensional figures and use the formulas that yield the dimensions, area, or volume of the figures.

Graduation and persistence rates. Graduation and persistence rate information for IPFW is available at www.ipfw.edu/registrar/consumer.

Classification of applicants:

Applicants for undergraduate admission are classified into one of the following admission categories:

1. Beginning freshman. If you have never attended a college, you must submit an application, a high school transcript or GED scores, and an application fee. Unless you graduated from high school more than two years ago, you must also submit SAT I or ACT scores.

To have your SAT I scores sent to IPFW, use code number 1336.

To have your ACT scores sent to IPFW, use code number 1217.

If you are a high school student, you should apply to IPFW as soon as possible after your junior year. Priority consideration will be given to applications for regular admission received by:

Aug. 1 for *fall semester*

Dec. 15 for *spring semester*

May 1 for *summer session I*

June 15 for *summer session II*

If your application and supporting materials are received after these deadlines, you either may be admitted on a temporary basis or advised to pursue regular admission for a subsequent semester.

If you are a high school senior completing graduation requirements at the end of your seventh semester, you must meet all regular admission criteria listed below in order to enroll in the spring semester. If you have not met all requirements, you will be considered for admission for the following fall.

Admission requirements. If you graduated from high school more than two years before the semester for which you are seeking admission and earned a high school diploma (not a certificate of completion), IPFW will waive the general requirements listed below. However, some of the university's degree and certificate programs have admission requirements in addition to the campus requirements. These program-specific requirements are explained in Parts 4 and 5 of this *Bulletin* and cannot be waived.

Requirements for Indiana residents. As a resident of Indiana, you may expect to be admitted if you (1) are a graduate (which includes passing of the GQE) of an Indiana-accredited high school with a CORE 40 or Academic Honors Diploma, (2) submit satisfactory SAT I or ACT scores, (3) submit your application to IPFW on time, and (4) meet the following requirements:

Admission to Indiana University programs. You must rank in the upper half of your high school class. Your high school units (semesters) should include at least six units of mathematics (algebra, geometry, and advanced algebra) and six units of laboratory sciences (biology, chemistry, or physics), six units of social studies, four units of foreign language, and other units to total 32 units. Eight units of English are required.

Admission to Purdue University programs. Admission requirements for Purdue University programs vary as follows:

Programs in the College of Arts and Sciences: If you plan to complete a bachelor's degree with majors in mathematics or a science in four years, you should have completed the following in high school: one unit of trigonometry and two units of chemistry (for any science degree).

Programs in technology, organizational leadership and supervision, and consumer and family sciences require that you rank in the top two-thirds of your high school class, and that your transcript shows eight units (semesters) of English and two each of algebra, advanced algebra, geometry, and laboratory science.

For admission to programs in *engineering*, see admission requirements under the College of Engineering, Technology, and Computer Science.

For admission to programs in *nursing*, see admission requirements under the College of Health and Human Services.

Other Purdue programs not having program-specific requirements require that you be in the top half of your high school class and that your high school transcript shows eight units (semesters) of English, and six each of mathematics, and laboratory science and social studies. IPFW defines mathematics as algebra, geometry, trigonometry, and calculus. Laboratory sciences include biology, chemistry, and physics.

Additional requirements for nonresidents. If you are not a resident of Indiana, you must meet the regular admission criteria for Indiana University or Purdue University and those for the program of study you have selected, and must generally rank in the top half of your high school graduating class.

Exploratory. If you graduated from high school within the past two years, have not attended another college or university, and do not meet the standards for regular admission, you may be eligible to begin as an exploratory student. To be admitted as an exploratory student, you must rank in the top 80 percent of your high school graduating class; have completed eight units of English, two units of academic algebra, two units of academic geometry, and two units of laboratory science; and one of the following:

- rank in the top 80 percent of your high school graduating class, or
- have a combined SAT score of 1120 or above or an ACT composite score of 16 or above.

Contact an IPFW admissions counselor if you do not qualify for admittance as an exploratory student and wish to discuss your options.

Exploratory students receive academic advising through Mastodon Advising Center (Kettler 109, 260-481-6595).

Applications and other required materials must be received by July 1 for fall semesters and by Dec. 1 for spring semesters.

2. Intercampus transfer from Indiana University or Purdue University. If you are currently attending, or have attended, another IU or Purdue campus and want to transfer temporarily or permanently to IPFW, you must submit an application, an unofficial transcript from your IU or Purdue campus, and official transcripts from any colleges attended since your enrollment at IU or Purdue. No application fee is due.

3. Transfer. If you have attended college but never attended IPFW, IU, or Purdue, you must submit an application, a high school transcript or GED scores, an application fee, and official transcripts from all colleges you have attended. A cumulative GPA of 2.00 (C) or higher is required. If your grades are deficient, you may be considered for admission for the following semester.

4. Re-entry. If you previously attended IPFW but have not registered for classes at IPFW for more than one year, you must submit an application, unofficial IU or Purdue transcript(s), and official transcripts from any colleges attended since your enrollment at IU or Purdue. No application fee is due.

Since your re-entry is subject to the approval of the specific division/department you wish to re-enter, one or more working days may be required to process your application before you can register for classes.

5. Special high school. If you are a high school junior or senior ranking in the top half of your class, you may take up to 24 credits as a temporary student. You must submit an application, and a high school transcript. SAT I or ACT scores may be required. No application fee is due. Not eligible for financial aid.

6. Special adult. If you graduated from high school more than two years ago and have not attended college, you may take up to 24 credits at IPFW as a temporary student. You must submit an application but need not submit an application fee or additional documentation. Not eligible for financial aid.

7. Special college graduate. If you hold a bachelor's degree and wish to take undergraduate courses but do not plan to pursue another undergraduate degree, you may take up to 24 undergraduate credits as a temporary student. You must submit an application but need not submit an application fee or additional documentation. Not eligible for financial aid.

8. Guest. If you want to become a visiting student from another college outside the IU or Purdue systems, you may enroll temporarily at IPFW for up to 24 credits. You must submit an application and an official transcript from your home institution. No credits will be evaluated for transfer to IPFW. No application fee is due. Not eligible for financial aid.

Institutional, state, and federal financial aid is not available to special adult students, graduate nondegree students, special high school students, and guest students. These are temporary/nondegree-seeking classifications.

Regular admission of a temporary student. If you are admitted in temporary status, you may apply for regular admission. After you have earned 24 credits in temporary status, you may register for additional credits only after you apply for and are granted regular admission. Exceptions are considered by the registrar upon the recommendation of the college/school/division or department through which you last registered. If you are granted regular admission, you will be notified as to which of the courses you completed as a temporary student may be applied to satisfy the requirements of your degree program. An application fee will be charged. If you are denied regular admission, you will be notified of the reasons for this decision.

Academic renewal. This option may be available to you under the following conditions:

- You were previously admitted to and completed classes at IPFW;
- You have not registered for classes at IPFW or any other campus of Indiana University or Purdue University for five or more calendar years; and
- The college/school/division through which you re-enter IPFW provides this option for eligible students.

If you are eligible for the academic-renewal option, a participating college/school/division may exclude from the calculation of your graduation GPA grades you previously earned that are considered to be below "passing." However, both these grades and the courses in which they were earned will remain on your official academic record.

You must request this option; it must be exercised during the re-entry semester and can be employed only one time per student. For additional information, please contact the college/school/division that offers the degree you are seeking.

2. Affiliation with Indiana University or Purdue University

IPFW is a campus of both Indiana University and Purdue University. If you are enrolled at IPFW as an Indiana University student and transfer to another campus of Indiana University, all credits and grades you have earned will be retained on your academic record. The same is true if you are enrolled at IPFW as a Purdue University student and transfer to another campus of Purdue University. However, if you change your university affiliation when transferring from IPFW to another campus, courses completed at IPFW will be treated as transfer credit.

3. Residency

Resident student status for fee purposes. When you are admitted to IPFW, you are classified by the admissions office either as a resident or a nonresident of the State of Indiana. This classification is determined by rules established for all IPFW students by the trustees of Purdue University. If you are classified as a nonresident student, you must pay nonresident fees as shown in the schedule of fees.

Among other criteria, resident student status for fee purposes requires all independent students who enter or re-enter the State of Indiana to be domiciled in the state for 12 consecutive months before the first day of classes of the semester or summer session for which reclassification may be sought. If you think you are classified incorrectly, you may apply for resident student status. To appeal your residency classification, go to the following Web site and print off the application and instructions:

www.ipfw.edu/registrar/policies/residency.shtml

When complete, return to IPFW Registrar, 2101 E. Coliseum Blvd., Fort Wayne, IN 46805-1499.

4. Student Identification Number

You will be assigned a nine-digit number typically beginning with either 900 or 999 as your student identification number. It is used to identify records within IPFW and has no significance outside IPFW. It will not be provided to external agencies or individuals except in accordance with university policy on release of student information.

You are, however, required to provide IPFW with your Social Security number so that IPFW can issue certain informational returns to the Internal Revenue Service and to you. You are also required to provide your SSN on the Free Application for Federal Student Aid if you desire to apply for federal or state financial aid. IPFW does not use your SSN as your student identification number, but only for those purposes required by law or governmental agencies.

5. Fees and Expenses

All fees are subject to change by action of the trustees. Fees for the 2009-10 school year are shown below:

Course Fees (may not apply to continuing-education courses)

<i>Undergraduate residents</i>	\$219.85 per credit
<i>Undergraduate nonresidents</i>	\$518.15 per credit
<i>Graduate residents</i>	\$271.05 per credit
<i>Graduate nonresidents</i>	\$602.25 per credit
<i>Distance learning classes</i>	\$277.55 per credit

If you audit a course, regular course fees are assessed.

Other Fees. The following fees are in addition to the course fees listed above.

<i>Admission application</i>	\$30
<i>Readmission application</i>	\$100

<i>Late registration fee</i>	\$8.50 per credit
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(\$100 maximum)

<i>Continuing Studies fee</i>	varies
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Refunds. Fee assessments and/or refunds are determined as of the date forms are submitted to the registrar's office in person or via the Web registration system, regardless of any other dates that may appear on the forms. Requests for exceptions to the refund schedule will be considered only to resolve problems that result from (1) documented errors made by university representatives or (2) other circumstances that are clearly the responsibility of IPFW. Requests and supporting documentation must be received by the registrar's office within the first two weeks of classes.

IPFW reserves the right to cancel courses and will refund all fees assessed. If you withdraw from a class, the following refund schedule will apply:

<i>Number of Weeks</i>	<i>100%</i>	<i>60%</i>	<i>40%</i>	<i>20%</i>	<i>0%</i>
14, 15, or 16	Days 1-7	Days 8-14	Days 15-21	Days 22-28	Thereafter
12 or 13	Days 1-7	Days 8-14	Days 15-21	Days 22-28	Thereafter
9, 10, or 11	Days 1-7	Days 8-14	Days 15-21	Days 22-28	Thereafter
8	Days 1-3	Days 4-7	Days 8-10	Days 11-14	Thereafter
7	Days 1-3	Days 4-7	Days 8-10	Days 11-14	Thereafter
6	Days 1-3	Days 4-7	Days 8-10	Days 11-14	Thereafter
5	Days 1-3	N/A	Days 4-7	N/A	Thereafter
4	Days 1-3	N/A	Days 4-7	N/A	Thereafter
3	Days 1-3	N/A	Days 4-7	N/A	Thereafter
2	Days 1-2	N/A	Days 3-4	N/A	Thereafter

1	Day 1	N/A	Day 2	N/A	Thereafter
Less than 1	Day 1	N/A	N/A	N/A	Thereafter

Notes: A 100 percent refund will be allowed through the day of the first class meeting, even if it occurs after the designated period.

Any course meeting for more than eight weeks will use the refund schedule approved for fall and spring semesters.

All calendar days are counted, including weekends.

If you are receiving federal Title IV financial aid (Stafford, Pell, Perkins, SEOG), and you make a full withdrawal, a calculation will be made to determine the amount of unearned aid that you will be required to repay. Specific information about this calculation may be obtained at the financial aid office or at www.ipfw.edu/financial.

Refunds are not transferable from one student to another. To qualify for a refund, your class withdrawal must be processed during the periods specified above. The refund schedule for off-campus credit classes offered through the Division of Continuing Studies may differ from the one above and appears in registration materials published by the Division of Continuing Studies.

Payment plan options. Payment plan options are available through the bursar's office.

Senior citizen fee-remission program. A waiver equal to one-half the resident tuition (to a maximum of 9 credits per semester) is available to Indiana residents who are age 60 or older, retired, not full-time employees, and high school graduates or GED recipients. The waiver does not apply to fees. This program is available only during the week prior to the start of classes and also during late registration. Additional information and applications are available from IPFW Financial Aid office (Kettler 102, 260-481-6820).

6. Enrollment Certification

The registrar's office is the only university office authorized to officially certify your enrollment status. All requests for enrollment certification should be directed to that office. Your enrollment status for a specific semester/session can be certified only after classes for that semester/session have begun and will be reported only as of the date requested.

7. Statement on Civility

Indiana University-Purdue University Fort Wayne is committed to the goals and ethics of academic investigation and education. The foundation of academic pursuit is the process of free inquiry, in which individuals may openly explore and express ideas. Free inquiry requires an environment that encourages open investigation, as well as the educational growth and positive social development of individuals. therefore, it is important to state explicitly the ethics that define our academic community.

Prominent among the values that define the academic community is civility, which includes mutual respect, fairness, and politeness. Membership in any community requires a concern for the common good for all who belong to that community. Each individual may possess different ideas, as well as different ways of communicating those ideas, particularly in a community as varied and diverse as a university. Because of these differences, respect and civility are integral to maintaining the quality of the academic environment and free inquiry. Respect and civility should therefore be afforded to all individuals regardless of race, ethnicity, gender, age, sexual orientation, disability, religion, family status, socioeconomic level, educational background, veteran status, or position at the university.

Because it is not possible to establish a set of rules or guidelines that will address every issue of civility, all members of the academic community are called upon to promote and value this ethic of common respect and civility. Ultimately, such a community-wide concern will assure the continuation of a free and open exchange of ideas.

8. Affirmative Action, Nondiscrimination, and Nonharassment

IPFW is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the university seeks to develop and nurture diversity. The university believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

IPFW views, evaluates, and treats all persons in any university-related activity or circumstance in which they may be involved solely as individuals on the basis of their personal abilities, qualifications, and other relevant characteristics.

IPFW prohibits discrimination against any member of the university community on the basis of race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a disabled or Vietnam-era veteran. The university will conduct its programs, services, and activities consistent with applicable federal, state, and local laws, regulations, and orders and in conformance with the procedures and limitations as set forth in Purdue University's Executive Memorandum No. D-1, which provides specific contractual rights and remedies. Additionally, the university promotes the full realization of equal employment opportunity for women, minorities, persons with disabilities, and Vietnam-era veterans through its affirmative action program.

If you have a question or complaint, or want advice, you may talk with the affirmative action officer or an official designee (Kettler 110N, 260-481-6106) or the director of Services for Students with Disabilities (Walb 113, 260-481-6657).

9. Release of Student Information

The IPFW policy governing access to student records, which complies with the *Family Educational Rights and Privacy Act of 1974*, is described below:

Definitions:

A *record* includes any data or information about you and related individuals, regardless of the media used to create or maintain the record.

Educational records include records maintained by the institution but exclude records maintained by individuals and available only to those individuals or designated substitutes (that is, "personal files"). Your educational records are located and maintained by administrators in one or more of the following offices: Academic Counseling and Career Services; Admissions; Alumni Relations; Athletics, Recreation, and Intramural Sports; Bursar; Center for Academic Support and Advancement; Continuing Studies; Financial Aid; Honors Program; Police and Safety; Registrar; student affairs administration; and academic units.

Note: The registrar's office is the *only* university office authorized to issue official transcripts and certify students' enrollment status. All requests for such documentation must be directed to that office.

Public information consists of your name, class standing, college/school/division, major field of study, dates of attendance, degrees and awards, recognized student activities, sports, athletics information, and current enrollment status; your address and telephone number are also public information unless you have filed a registrar's form to keep these private. Records of arrests and/or convictions are public records and thus not subject to university policy.

Note: If you wish to restrict the release of your address and telephone number, you must do so by the end of the first week of classes for a session in order to exclude this information from any student directory that may be published.

Release in emergencies. The confidentiality of all records may be broken in an emergency if deemed necessary by the severity of the emergency, the usefulness of the records, and the extent to which time is critical.

Release to you. Your records are available to you with the following exceptions: confidential letters of recommendation submitted prior to 1975; records of your parents' financial status; records related to your student employment that are subject to other laws and are administered by the Human Resources office; medical and psychological records, which will be released only to a healthcare professional designated by you; and, if you signed a voluntary waiver of access, letters of recommendation related to admission, candidacy for awards, and candidacy for employment - these records may be used only for the purpose originally intended.

You may see any of your available records within 30 days after submitting a written request, either in person or by mail, and may copy any of these records, subject only to payment of any applicable copying charges. You will receive an interpretation of the record upon request, at or after the time that access is granted.

If you object to any part of your record and the responsible office will not revise the record as requested, you may request a formal hearing concerning the objection. Policies and procedures governing the hearing process will be specified by the vice chancellor for academic affairs.

Release to IPFW faculty and staff. Your records are available to members of the faculty and staff who have a legitimate need for them, as determined by the administrator of the office responsible for maintenance of the record.

Release to others. Except as specified below, your records will be released only upon completion of a consent form or letter you have signed. Any such release will include a notice that further release by the recipient is prohibited by law. A record of the release will be maintained.

Records about you will be released without your consent to your parents if you are a dependent as defined by the Internal Revenue Service; to federal officers as prescribed by law; as required by state law; to agencies or individuals conducting educational research, provided that the administrator of the records is satisfied concerning the legitimacy of the research effort and the confidentiality to be maintained by the researcher; to agencies responsible for accreditation of the institution or its programs; in response to a lawful subpoena, after making reasonable attempts to provide prior notification and opportunity for objection by you; and to institutional security officers when necessary for a criminal investigation.

Retention of records. IPFW reserves the right to maintain only those records it considers useful and to set retention schedules for various categories of those records. However, the administrator responsible for each category of records will ensure that a record being challenged is not destroyed prior to resolution of the dispute.

10. Parking and Traffic Regulations

Parking. You are charged a parking fee based on the number of credits you take. This entitles you to park in open parking spaces (not in spaces designated as "A" parking, Green Lined spaces) in lots or garages. Parking permits for students with disabilities are available from Police and Safety (Support Services 105). Validation from a physician or Services for Students with Disabilities (Walb 113, 260-481-6657) is required.

Traffic regulations. The operation of motor vehicles on the IPFW campus is governed by applicable state, local, and campus regulations. University police officers are empowered to enforce these statutes. Additional information is published in the *Student Handbook and Planner*, with complete information about IPFW parking and traffic regulations appearing in the *Vehicle Regulations and Emergency Informationn* brochure that is available from University Police and Safety and other campus locations.

11. Smoking

Smoking is prohibited in any university facility and on any university grounds except in parking lots and designated smoking areas.

The purpose of this policy is to provide a healthy, comfortable, and productive environment for the campus community. Accordingly, all employees, students, and visitors are expected to comply.

12. Drug and Alcohol Abuse Prevention

Guidelines for the prevention of alcohol and substance abuse are included in the *Student Handbook and Planner*. Copies of the handbook are available at various campus locations.

13. Ethical Guidelines for Student Computer Users

(Reprinted from IPFW Faculty Senate Document SD98-24a, revised Dec. 10, 2001)

The IPFW Code of Student Rights, Responsibilities, and Conduct (hereafter, the Code) sets forth general policies and procedures governing the use of university facilities by students. The purpose of these guidelines is to interpret these policies and procedures specifically for students using the university's computing facilities.

University computer resources are designed to be used in connection with legitimate, university-related purposes. The use of university computing resources to disseminate obscene, pornographic, or libelous materials; to threaten or harass others; or otherwise engage in activities forbidden by the Code is subject to disciplinary action as specified in the Code.

Intellectual Property Rights and Responsibilities. Central to an understanding of the rights and responsibilities of student computer users is the notion of intellectual property. In brief, this concept holds that materials stored in electronic form are the property of one or more rightful owners. Like any other property, electronically stored information, whether data or programs, can be stolen, altered or destroyed, misappropriated, or plagiarized. Such inappropriate activities violate the Code and are subject to disciplinary action as set forth in the Code.

Access Rights and Responsibilities. The use of lab, e-mail, Web, and other computing resources should be focused on facilitating individual or small-group interaction; other uses - for example, using computer resources to conduct a commercial enterprise or private business - constitute theft from the university subject to disciplinary action as specified in the Code. Similarly, the introduction of information that interferes with the access or information of others - for example, the introduction of programs of a type commonly called "viruses" or of nonacademic, network game simulations - is subject to disciplinary action. E-mail should not be used for junk mailings.

Junk-mail, including chain mail, wastes system resources and the time of those who receive it. Neither should e-mail be used to forge a message so as to have it appear to come from another user. All such inappropriate use of e-mail is subject to disciplinary action, including, but not limited to, loss of e-mail account.

Certain university-controlled computing resources are openly available to all students on a first-come, first-served basis; access to other resources is limited - often only by means of posted notices - to students in certain disciplines or specified courses; access to still other resources is carefully controlled by such means as user IDs and passwords.

Students are responsible for adhering to the spirit and the letter of these access controls. Violations of access rights can be interpreted under the Code as theft of university services whether or not those services have been separately billed. Students are also responsible for ensuring the confidentiality of access rights under their control. For example, release of a password, whether intentional or inadvertent, invites misuse by others and may be subject to disciplinary action.

General Rights and Responsibilities. Despite access controls imposed, system failures may occasionally make it possible for students inappropriately to read, use, copy, alter, or delete information stored electronically on a university computer system. Students are responsible for not exploiting such system failures and for reporting them to proper university personnel so that corrective steps can be taken.

The university strives to maintain a quiet, library-like environment in its computer labs so that lab users can use their time productively and with minimal distractions. Proper use of computer resources follows the same standards of

common sense and courtesy that govern the use of other public facilities. Improper use violates those standards by infringing upon others' ability to fulfill their responsibilities.

All inappropriate uses of computing resources should be reported to proper authorities for possible disciplinary action.

Code of Student Rights, Responsibilities, and Conduct

Part I. Student Rights and Responsibilities

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Preamble. IPFW regulations governing the actions of students are intended to enhance the values that must be maintained in the pursuit of IPFW's mission and goals. These values include freedom of inquiry, intellectual honesty, freedom for the open expression of ideas and opinions within limits that protect the rights of others, and respect for the views and the dignity of other persons. In exercising their rights, students must bear responsibility to act in accordance with local, state, and national laws and IPFW rules. No right should be construed as enabling students to infringe upon the individual rights of another member of the academic community.

A. Individual Rights and Responsibilities as Citizens

1. Students retain all of their citizenship rights when enrolled at IPFW.
2. Students who violate civil law may incur penalties prescribed by civil authorities. Only where IPFW's interests as an academic community are distinct from those of the general community should the special authority of IPFW be asserted.
3. Nondiscrimination - IPFW is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the university seeks to develop and nurture diversity. The university believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

IPFW views, evaluates, and treats all persons in any university-related activity or circumstance in which they may be involved solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

IPFW prohibits discrimination against any member of the university community on the basis of race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a disabled or Vietnam-era veteran. The university will conduct its programs, services, and activities consistent with applicable federal, state, and local laws, regulations, and orders and in conformance with the procedures and limitations as set forth in Purdue University's Executive Memorandum No. D-1, which provides specific contractual rights and remedies. Additionally, the university promotes the full realization of equal employment opportunity for women, minorities, persons with disabilities, and Vietnam-era veterans through its affirmative action program.

4. Antiharassment - It is the policy of IPFW to maintain the campus as a place of work and study for faculty, staff, and students free from all forms of harassment. In providing an educational and work climate that is positive and harassment-free, faculty, staff, and students should be aware that harassment in the workplace or the educational environment is unacceptable conduct and will not be tolerated. This policy addresses harassment in all forms, covering those with legally protected status for reasons of race, gender, religion, color, age, national origin or ancestry, or disability, as well as those who are harassed for other reasons such as sexual orientation.

B. Individual Rights and Responsibilities as Students

1. Degree-seeking students have the responsibility for selecting a major field of study, for choosing an appropriate degree program within the discipline, for planning class schedules, and for meeting the

requirements for degrees. IPFW will provide advisors to assist students in academic planning, but students are responsible for being knowledgeable about all academic requirements that must be met before a degree is granted.

2. Students have the right to receive accurately and plainly stated information that enables them to understand clearly:
 - a. the general qualifications for establishing and maintaining acceptable academic standing within a particular major and at all other levels within IPFW,
 - b. the graduation requirements for specific curricula and majors, and
 - c. the course objectives, requirements, and grading policies set by individual instructors for their courses.
3. In the classroom, students have the freedom to raise relevant issues pertaining to classroom discussion, to offer reasonable doubts about data presented, and to express alternative opinions to those being discussed. However, in exercising this freedom, students shall not interfere with the academic process of the class.
4. Students' course grades shall be based upon academic performance, and not upon opinions or conduct in matters unrelated to academic standards. Students have the right to discuss and review their academic performance with their instructors. Students who feel that any course grade has been based upon criteria other than academic performance have the right to appeal through the IPFW grade appeals system.
5. Students have the right to obtain a clear statement of basic rights, obligations, and responsibilities concerning both academic and personal conduct.
6. Students have the right to participate in the formulation of IPFW policies that directly affect them. In exercising this right, students have the right to access appropriate information, to express their views, and to have their views considered.
7. Students have the privacy rights specified in the IPFW policy on the release of student information.

C. Rights and Responsibilities as Participants in Student Groups, Student Organizations, and Campus Activities

1. Students have the right to form, join, and participate in groups or organizations that promote the common interests of students, including but not limited to groups or organizations that are organized for academic, professional, religious, social, economic, political, recreational, or cultural purposes.
2. Any group of students may petition to become a recognized IPFW student organization in accordance with the established guidelines. Any appeal of a campus decision to discontinue or refuse recognition of a student group shall be made through the Campus Appeals Board.
3. Any student group recognized as an IPFW student organization shall be entitled to the use of available campus facilities in conformity with regulations. Recognition shall not imply IPFW endorsement of group goals and activities.
4. Any recognized IPFW student organization or any group of students able to secure sponsorship by a recognized student organization and to demonstrate financial responsibility has the right to present speakers of its choice to address members of the IPFW community using appropriate campus facilities. These assemblies shall be subject to regulations necessary to prevent space and time conflicts and to protect the operations of the campus and the safety of persons or property.
5. Freedom of assembly shall be guaranteed to all members of the IPFW community. Such assemblies shall be consistent with IPFW regulations regarding the time, place, and manner of such assemblies.
6. A student, student group, or student organization has the right to distribute written material on campus without prior approval providing such distribution is consistent with appropriate regulations concerning the time, place, and manner of distribution and does not interfere with IPFW activities.
7. Students who publish student publications under IPFW auspices have the right to be free of unlawful censorship. At the same time, students who publish such publications must observe the recognized canons of responsible journalism such as the Sigma Delta Chi Code of Ethics and avoid libel, obscenity, undocumented allegations, attacks on personal integrity, and the techniques of harassment and innuendo. Editors and managers of *The Communicator* may not be arbitrarily

suspended or removed from their positions because of student, faculty, administrative, or public disapproval of their editorial policies or publications. Student editors and managers may be suspended or removed from their positions only for proper cause and by appropriate proceedings conducted by the board of directors. All student publications shall explicitly state on the editorial page that the opinions expressed are not necessarily those of IPFW or of the student body.

D. Summary of Rights and Responsibilities

1. This statement of Student Rights and Responsibilities is a reaffirmation by the entire IPFW community that the constitutional guarantees and the basic principles of fair treatment and respect for the integrity, judgment, and contribution of the individual student, coinciding with each student's freedom to learn set forth in the foregoing articles, are essential to the proper operation of an institution of higher learning. Accordingly, in the interpretation and enforcement of the policies, rules, and regulations of IPFW, these student rights shall be preserved and given effect, but they shall not be construed or applied so as to limit the rights guaranteed students under the Constitution of the United States or the Constitution of the State of Indiana.

Whenever a student or a group of students claims that these rights have been violated and that the student or group of students has been or will be adversely affected thereby, and such complaint is not resolved informally by the interested parties, it may be presented to an appropriate body of the campus appeals system. Through this system, an appropriate individual, board, or committee shall have the power and duty to hear the interested parties and to make findings on complaints within its jurisdiction. In case of grade appeals, the individuals and committees designated in the IPFW grade appeals system shall have final authority. In all other cases, the Campus Appeals Board shall submit recommendations to the chief administrative officer of IPFW after such claims related to alleged misconduct, for which disciplinary proceedings have been instituted, have been presented to said board and findings determined in an appropriate hearing. If necessary, the chief administrative officer of IPFW may present such recommendations to the university president and board of trustees for their consideration. If the student has a question as to whether grade appeals procedures or student complaint procedures (Part V) shall be used to resolve a complaint, the dean of students shall decide which procedures shall be used after consulting with the unit head of the faculty or staff member with whom the student or group of students has the complaint. Once the appropriate process is identified, the dean of students will explain the timelines associated with that process.

2. The enumeration of these rights and responsibilities shall not be construed to deny or disparage others retained by the student. Nothing contained in this bill shall be construed as any denial or limitation upon the legal authority or responsibility of the board of trustees to establish policies and to make rules and regulations governing the operation of IPFW.

E. Amendment of Rights and Responsibilities

Proposed amendments of these rights and responsibilities may be initiated by the Indiana-Purdue Student Government Association (IPSGA), Fort Wayne Senate, administrative officials, or the board of trustees and shall be submitted to the IPSGA, Fort Wayne Senate, and Community Advisory Council for consideration and recommendation before adoption by the board of trustees. In the event the board of trustees adopts an amendment not approved by IPSGA and Fort Wayne Senate, either the IPSGA or Fort Wayne Senate may withdraw its endorsement of the rights and responsibilities in whole or in part.

F. Definitions

1. An IPFW activity is any teaching, research, service, administrative, or other function, proceeding, ceremony, program, or activity conducted by or under the authority of IPFW, or with which IPFW has any official connection, whether taking place on or off campus. Included within this definition without limitation are IPFW cooperative-education programs, internships, practicums, field experiences, and athletic or other intercollegiate activities.
2. IPFW property means property owned, controlled, used, or occupied by IPFW.

Part II. Student Conduct Subject to Disciplinary Action

Preamble. Students are expected and required to abide by the laws of the United States, the laws of the State of Indiana, and the rules and regulations of IPFW. Students are expected to exercise their freedom to learn with responsibility and to respect the general conditions that maintain such freedom. IPFW has developed the following general regulations concerning student conduct that safeguard the right of every student to exercise fully the freedom to learn without interference.

IPFW may discipline a student for academic or personal misconduct for the following actions:

A. Academic Misconduct

1. Cheating-intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term "academic exercise" includes all forms of work submitted for credit or hours.
2. Fabrication-intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
3. Facilitating academic dishonesty-intentionally or knowingly helping or attempting to help another in committing dishonest acts.
4. Plagiarism-the adoption or reproduction of ideas or statements of another person as one's own without acknowledgment.

B. Personal Misconduct

IPFW may discipline a student for the following acts of personal misconduct that occur on campus property or in connection with an IPFW activity:

1. Dishonest conduct, including but not limited to false accusation of misconduct; forgery, alteration, or misuse of any IPFW document, record or identification; and giving to an IPFW official information known to be false.
2. Release of access codes for IPFW computer systems to unauthorized persons; use of an access code for a purpose other than that stated on the request for service.
3. Lewd or indecent conduct, obscene conduct, or obscene expression as defined by law.
4. Disorderly or disruptive conduct that interferes with teaching, research, administration, or other IPFW or IPFW-authorized activity.
5. Failure to comply with the directions of authorized IPFW officials in the performance of their duties, including failure to identify oneself when requested to do so, and violation of the terms of a disciplinary action.
6. Unauthorized entry, use, or occupancy of campus facilities; refusal to vacate a campus facility when directed to do so by an authorized official of IPFW.
7. Unauthorized taking or possession of IPFW property or services; unauthorized taking or possession of the property or services of others.
8. Intentional action or reckless disregard that results in damage to or destruction of IPFW property or of property belonging to others.
9. Possession of firearms or other weapons; possession or display of any firearm except as authorized by the IPFW police; and intentional possession of a dangerous article or substance as a potential weapon, or of any article or explosive calculated to injure or discomfort any person. Public law enforcement officials who are required by their departments to carry their firearms at all times must register with the IPFW police.
10. Acting with violence; and aiding, encouraging, or participating in a riot.
11. Harassment, as defined by the IPFW Antiharassment Policy.
12. Hazing, defined as any conduct that subjects another person, whether physically, mentally, emotionally, or psychologically, to anything that may endanger, abuse, degrade, or intimidate the person as a condition of association with a group or organization, regardless of the person's consent or lack of consent.
13. Physical abuse of any person or conduct that threatens or endangers the health or safety of another person.
14. Verbal behavior that involves an expressed or implied threat to interfere unlawfully with an individual's personal safety; personally abusive language ("fighting words") inherently likely to provoke a violent reaction in a face-to-face situation.

15. Possession, consumption, distribution, or sale of alcoholic beverages as defined by state law, on campus except as expressly permitted by the Internal Operating Procedures for the Possession, Consumption, Distribution, and Sale of Alcoholic Beverages on the Fort Wayne Campus.
16. Use, possession, manufacture, processing, distribution, or sale of any drug or controlled substance except as expressly permitted by law. The term "controlled substance" is defined in Indiana and includes, but is not limited to, substances such as marijuana, cocaine, narcotics, certain stimulants and depressants, and hallucinogens.
17. Violations of other published IPFW regulations, policies, or rules.
18. Violation of any IPFW rule governing student organizations or the use of IPFW property (including the time, place, and manner of meetings or demonstrations on IPFW property), or of any other IPFW rule that is reasonably related to the orderly operation of IPFW.
19. Obstruction or disruption of any IPFW activity or inciting, aiding, or encouraging other persons to engage in such conduct. Obstruction or disruption means any unlawful or objectionable acts or conduct: (1) that seriously threaten the ability of IPFW to maintain its facilities available for performance of its educational activities, (2) that are in violation of the reasonable rules and standards of IPFW designed to protect the academic community from unlawful conduct, or (3) that present a serious threat to person or property of the academic community. Such phrase shall include, without limitation of the foregoing general definition, the unlawful use of force or violence on or within any buildings or grounds owned, used, occupied, or controlled by IPFW; using or occupying any such buildings or grounds in violation of lawful rules or regulations of IPFW or for the purpose or with the effect of denying or interfering with the lawful use thereof by others; and injuring or harming any person or damaging or destroying the property of IPFW or the property of others within such buildings and grounds.

C. Other Student Conduct Issues

1. Demonstrations - Any individual or group activity or conduct apparently intended to call attention to the participants' point of view on some issues is not of itself misconduct. Demonstrations that do not involve conduct beyond the scope of constitutionally protected rights of free speech and assembly are, of course, permissible. However, conduct that is otherwise improper cannot be justified merely because it occurs in the context of a demonstration. Demonstrations that involve violations of any subsection of Part II-A or -B will not be permitted. A student will be charged with misconduct for any individual misconduct committed by the student in the course of a demonstration.
2. Misconduct Subject to Other Penalties - As provided in Chapter 273 of the 1969 Acts of the Indiana General Assembly, misconduct that constitutes a violation of these rules and regulations may be punished after determination of guilt by the procedures herein provided without regard to whether such misconduct also constitutes an offense under the criminal laws of any state or of the United States or whether such conduct might result in civil liability of the violator to other persons.
3. Personal Conduct Not on IPFW Property - IPFW may discipline a student for acts of personal misconduct that are not committed on campus property or in connection with an IPFW activity if the acts distinctly and adversely affect the security of the campus community or the integrity of the educational process.
4. Status During Disciplinary Proceedings - Except where summary action is taken as provided in Part III-C, the status of a student charged with misconduct shall not be affected, pending the final disposition of charges. The effective date of any disciplinary penalty shall be a date established by the final adjudicating body (dean of students or the Campus Appeals Board). In case of suspension or expulsion, the student shall not be withdrawn any earlier than the date the notice of charges originated or later than the effective date established by the final adjudicating body.

Part III. Student Disciplinary Procedures and Campus Appeals Board

Preamble. IPFW procedures for imposing academic and disciplinary sanctions are designed to provide students with the guarantees of due process and procedural fairness. Except as provided in Part IV, the procedures hereby established shall be followed in all cases in which IPFW institutes disciplinary proceedings against students for violations of rules of student conduct set forth in Part II.

A. Disciplinary Procedures for Academic Misconduct

1. When a student commits an act of academic misconduct that is not related to a course in which the student is enrolled, the dean of students has the authority to initiate academic misconduct proceedings against the student after consulting with the dean or director of the school or division in which the student is enrolled. The proceedings are governed by the same procedures that apply to acts of personal misconduct (Part III-B-1).
2. When a student in a course commits an act of academic misconduct related to that particular course, the instructor who is teaching the course has the authority to initiate academic misconduct proceedings against the student in accordance with the established procedures (Part III-A-2a).
 - a. An instructor who has information that a student enrolled in a course being conducted by the instructor has committed an act of academic misconduct related to that course is required to hold an informal conference with the student concerning the matter within 10 class days of discovering the alleged misconduct. The faculty member must advise the student of the alleged act of misconduct and the information upon which the allegation is based.
 - b. If the instructor concludes that the student did commit the act of misconduct as alleged, the instructor is authorized to impose an appropriate academic sanction related to the particular course involved. An appropriate academic sanction for such misconduct may include, but is not limited to, any of the following:
 1. The student may be given a lower grade than the student would otherwise have received or a failing grade for any assignment, course work, examination, or paper involved in the act of misconduct.
 2. The student may be required to repeat the assignment, complete some additional assignment, or resubmit any assignment, course work, examination, or paper involved in the act of misconduct.
 3. The student may be given a lower grade than the student would otherwise have received or a failing grade for the course.
 - c. After imposing an academic sanction, the instructor is required to report the matter and action taken within 10 class days in writing to the student, the chair of the student's department, the dean or director of the student's school or division, and the dean of students.
 - d. If the student's course grade is affected by the sanction, the student has the right to appeal the academic sanction imposed by an instructor through the IPFW grade appeals system.
 - e. A student may not be placed on disciplinary probation or suspended or expelled from IPFW or a school or division within IPFW because of an act of academic misconduct unless the dean of students concludes that such a sanction is justified by the nature of the act or because the student has committed previous acts of misconduct.
 - f. If the dean of students concludes that additional disciplinary action is warranted, the proceedings will be governed by the same procedures that apply to acts of personal misconduct.

B. Disciplinary Procedures for Personal Misconduct

Any member of the IPFW community may initiate a complaint with the dean of students. Disciplinary proceedings are those proceedings initiated by the issuance of a notice of charges and are governed by the following procedures. Disciplinary proceedings for an act of personal misconduct that is committed simultaneously with an act of academic misconduct are also governed by the following procedures unless the dean of students and the faculty member involved agree otherwise.

1. Notice of Charges

- a. A disciplinary proceeding is initiated by the dean of students by sending a notice to the student who is the subject of the complaint. If disciplinary proceedings are initiated against a student under the age of 18, the dean is required to make reasonable efforts to assure that the parent(s) or, when appropriate, the legal guardian of the student is notified concerning the proceedings and the nature of the complaint.

- b. The notice shall be sent by certified mail to the student's address as it appears in the official records of IPFW or shall be delivered personally to the student. The notice shall quote the rule claimed to have been violated and shall fairly inform the student of the reported circumstances of the alleged misconduct. The notice shall require the student to appear in the office of the dean of students at a time and on a date specified (which ordinarily will not be earlier than three class days after the mailing of the notice) to discuss the alleged violations. A copy of these regulations shall accompany each notice of charges.
- c. The notice shall inform the student of the following:
 - 1. The offense the student is alleged to have committed by citing the relevant section of these regulations;
 - 2. The date, time, and place of the alleged offense, and other relevant circumstances;
 - 3. The date, time, and place of the informal hearing to discuss the alleged violation;
 - 4. That the student may have an advisor or other counsel present during the hearing; that an advisor or counsel is limited to the role of advising the student; and that an advisor or counsel may not participate in presenting the case, questioning the witnesses, or making statements during the hearing;
 - 5. That the student need not answer questions and that a choice to remain silent will not be taken as an admission of guilt, nor shall it be detrimental to the student's position;
 - 6. That, if the student fails to appear for the hearing, the dean of students may (a) reschedule the conference; (b) dismiss the charges; or (c) if the dean of students reasonably believes the failure to appear to be inexcusable, impose any of the prescribed disciplinary penalties.

2. Informal Hearing

- a. When the student appears as required, the dean of students shall inform the student as fully as possible of the facts concerning the alleged misconduct and of the procedures that follow. The student may, but need not, make responses and explanations.
- b. If, after discussion and such further investigation as may be necessary, the dean of students determines that the violation alleged is not supported by the evidence, the dean of students shall dismiss the accusation and notify the student.
- c. If, after discussion, or if the student fails to appear, and if the dean of students believes that the violation occurred as alleged, the dean of students shall so notify the student and shall propose a disciplinary sanction by means of a written notice. The student, by such notice, shall be offered the choice of either consenting to the determination and proposed penalty or of requesting a hearing before the Campus Appeals Board. Should a student desire a hearing before the appeals board, the request shall be made in writing and delivered to the office of the dean of students no later than seven class days after the mailing of the notice.
- d. If no written choice is received by the dean of students within the time specified, no further hearing shall be held, the disciplinary sanction proposed by the dean of students shall be imposed, and the action shall be considered final.
- e. Both the student and the student's accuser shall be informed of the outcome of any hearing brought alleging a sexual assault.

3. Disciplinary Sanctions

The dean of students is authorized to impose any one or a combination of the following sanctions for acts of personal misconduct:

- a. Reprimand and Warning. A student may be given a reprimand accompanied by a written warning that the student may receive additional sanctions if the student engages in the same misconduct again or commits any other violation of this code.
- b. Disciplinary Probation. A student may be placed on disciplinary probation for a specified period under conditions specified in writing by the dean of students, with a warning that

any violation of the conditions or any further acts of misconduct may result in additional disciplinary sanctions, including suspension or expulsion from IPFW. As a condition of probation, the student may be required to participate in a specific program, such as an alcohol-education program, or to provide a specific service, such as the repair or restoration of any property damaged or taken by the student.

- c. Restitution. A student may be required to pay the cost for the replacement or repair of any property damaged by the student. If the student fails to pay the cost or make the repairs, the student may be subjected to additional sanctions, including suspension or expulsion.
- d. Participation in a Specific Program. A student may be required to participate in a specific program, such as an alcohol-education program. If the student fails to participate in the program as directed, the student may be subjected to additional sanctions, including suspension or expulsion.
- e. Provision of a Specific Service. A student may be required to provide a specific service, such as the repair or restoration of any property damaged or taken by the student. If the student fails to provide the service as directed, the student may be subjected to additional sanctions, including suspension or expulsion.
- f. Suspension. A student may be suspended from classes and future enrollment and excluded from participation in all aspects of campus life for a specified period of time.
- g. Expulsion. A student may be dismissed from IPFW. The student may, after two years, petition for readmission to IPFW.

4. **Campus Appeals Board**

- a. Composition. The Campus Appeals Board shall consist of nine members selected in the following manner: four students appointed by the president of Indiana-Purdue Student Government Association subject to confirmation by the Student Senate; three faculty members elected by the Fort Wayne Senate; and two administrative staff members appointed by the chancellor, one of whom shall be designated as chair of the Campus Appeals Board. An equal number of alternates from each constituent group shall be appointed at the same time and in the same manner as the regular members. From such panels of members and alternates, the chair shall designate a hearing panel consisting of a minimum of five members including at least two students.
- b. Terms of Office. The term of office for student members and their alternates shall be one year, and for the faculty and administrative members, it shall be two years, except that members shall continue to have jurisdiction of any case under consideration at the expiration of their term. The terms of office for all members shall begin at the start of the fall semester. No member shall serve more than two consecutive terms. If any appointing authority fails to make the initial appointments to the Campus Appeals Board within the time specified, or to fill any vacancy on the panel of alternates within five days after being notified to do so by the chief administrative officer, or if at any time the Campus Appeals Board cannot function because of the refusal of any member or members to serve, the chancellor may make appointments, fill vacancies, or take such other action as deemed necessary to constitute a Campus Appeals Board.
- c. Hearings
 - 1. The Campus Appeals Board may hear the following types of appeals from students: appeals of disciplinary findings and sanctions imposed by the dean of students, including findings and sanctions concerning student organizations; appeals of Student Judicial Court rulings; and appeals of faculty/staff decisions claimed to violate established student rights. Students who wish to request a hearing before the Campus Appeals Board shall submit a written request to the dean of students who shall in turn contact the chair of the Board. Before hearing the details of a case in which a faculty/staff decision or action is claimed to violate established rights, the designated hearing panel shall decide by majority vote whether there is a basis to grant the request for hearing. The bases for a decision to grant a request for hearing include (but are not limited

to) a finding that: (1) improper procedures have been followed at earlier steps of the appeals process; (2) new information is present; or (3) the faculty or staff member has declined to accept the recommendation of the unit head or the head of the next highest administrative level. If a request for a hearing is granted, the chair of the Board, will make arrangements for the hearing by phone or e-mail. The student and all other parties shall be notified of the arrangements for the hearing.

2. In all cases where an appeal is heard, the chair shall inform the parties to the appeal, in writing, of the following:
 - a. The violation alleged to have been committed, by citing the relevant section of these regulations;
 - b. The date, time, and place of the alleged violation, and other relevant circumstances of the complaint, including a summary of the evidence upon which the charges are based;
 - c. The date, time, and place of the hearing, which shall not be earlier than 10 class days after the date of the notice except by agreement of parties to the complaint;
 - d. That the parties must prepare a list of the persons that may be presented as witnesses and/or whose statements may be offered as evidence at the hearing for distribution to the parties and submit that list to the chair no later than five class days before the hearing, excluding Saturdays, Sundays, and holidays;
 - e. That the student is required to be present at the hearing and is entitled to present witnesses and to cross-examine witnesses who appear unless the Campus Appeals Board decides to proceed in the absence of the student because of extraordinary circumstances such as a student's refusal or inability to attend;
 - f. That the student is entitled to be represented at the hearing by counsel or an advisor of his or her choice at his or her own expense, but that the student is still required to be present even if represented by counsel or an advisor; and that an advisor or counsel may not participate in presenting the case, questioning witnesses, or making statements during the hearings;
 - g. That IPFW may be represented by legal counsel if it so elects, whose sole function shall be to advise the Appeals Board; and that counsel may not participate in presenting the case, questioning witnesses, making statements during the hearing, or be involved in the Board's determination of the appeal;
 - h. That the hearing will be closed to the public, unless both parties to the appeal request an open hearing. The chair of the Campus Appeals Board shall make arrangements satisfactory to the Campus Appeals Board to accommodate observers if a hearing is to be public, and the Campus Appeals Board's choice of the place and determination of the number of observers that can be conveniently accommodated are final;
 - i. That failure to appear at the hearing will be action for which the student forfeits the right of appeal if the Campus Appeals Board, upon diligent inquiry, finds such failure to be inexcusable;
 - j. That the decision of the Campus Appeals Board shall be based solely upon matters introduced at the hearing and must be based upon preponderance of evidence;
 - k. That within 10 class days after the conclusion of the hearing, the chair of the Campus Appeals Board shall render a written decision and include a brief explanation of the decision and set forth the

findings of fact upon which the decision is made. The chair shall promptly furnish copies of the decision to the student and to others with a need to know as determined by the Board. In the case of appeals concerning disciplinary findings and sanctions for alleged sexual assaults, both the appealing student and the student's accuser shall be informed of the outcome of the appeals proceedings.

Additional information to be provided in writing to the parties to the appeal is dependent upon the type of appeal to be heard.

3. Students who are appealing a dean of students' disciplinary finding and sanction shall additionally be informed:
 - a. That the student need not answer questions during the hearing, and that a choice to remain silent will not be taken as an admission of guilt, nor shall it be detrimental to the student's position;
 - b. Of the sanctions that may be imposed by the Campus Appeals Board;
 - c. That the Campus Appeals Board shall make a finding whether the student has committed the violation(s) as charged and shall either reverse the decision of the dean of students and acquit the student, affirm the finding of the dean of students and the disciplinary sanction imposed, or affirm the finding of the dean of students but in cases where a proposed disciplinary sanction is believed to be inappropriate to the misconduct, reduce or increase the severity of the sanction;
 - d. That the decision of the Campus Appeals Board is final and not subject to further appeal.
4. Students who are appealing a dean of students finding and sanction against a student organization shall additionally be informed:
 - a. That the Campus Appeals Board shall have jurisdiction to hear and shall be required to hear any appeal from a student organization which the dean of students has refused to recognize, has suspended for a period of time, or from which recognition has been withdrawn. In such cases, the Campus Appeals Board shall have the authority to reverse the finding of the dean and restore the student organization to its original status, or to affirm the finding and penalty imposed by the dean, or to reduce or increase the severity of the disciplinary penalty. The action of the Campus Appeals Board shall be final.
5. Students who are appealing Student Judicial Court rulings shall additionally be informed:
 - a. That the Campus Appeals Board shall have discretionary jurisdiction to hear appeals from the student government association. In such cases, it may affirm or reverse a decision, and its action shall be final.
6. Students who are appealing faculty/staff actions or decisions claimed to violate rights established under Part I of the Code, the Americans with Disabilities Act, Ethical Guidelines for Computer Users, or HIV/AIDS Guidelines shall additionally be informed:
 - a. That the Campus Appeals Board shall have the authority to convey recommendations to the chancellor of IPFW, whose decision is final.
- d. Appeals from Student Judicial Court. The Campus Appeals Board shall have discretionary jurisdiction to hear appeals from the student government association. In such cases, it may affirm or reverse a decision, and its action shall be final.

C. Summary Action

Summary disciplinary action by way of temporary suspension and exclusion from IPFW property may be taken against a student charged with misconduct without the issuance of a notice of charges and without the

procedures prescribed in Part III-B on the following conditions: (1) Summary action shall be taken only by the chancellor or the chancellor's designee, and only after the student shall have been given an opportunity to be heard if such procedure is practical and feasible under the circumstances; (2) Summary action shall be taken only if the chancellor or the chancellor's designee is satisfied that the continued presence of the student on IPFW property threatens harm to the student or to any other persons or to the property of IPFW or of others. Whenever summary action is taken under this provision, the procedures provided for in Part III-B for hearing and appeal shall be expedited so far as possible in order to shorten the period of summary action.

D. Time Limitations

Time limitations specified in the preceding sections of this code may be extended by either the dean of students or the Campus Appeals Board for a reasonable period if an extension is justified by good cause under the totality of the circumstances. The documentation for extending the time limitations must be provided to the student.

Part IV. Policy on Students with Mental Disorders

Preamble. Incidents of alleged student misconduct normally will be adjudicated in accordance with the provisions of the preceding regulations. If, however, the available evidence indicates that the student may be suffering from a mental disorder (as defined by the current edition of the American Psychiatric Association Diagnostic and Statistical Manual), and if the student's behavior poses a significant danger of causing harm to self, other persons, or property, or substantially disrupts the normal activities of IPFW, the student may be asked to withdraw voluntarily or may be administratively withdrawn involuntarily from IPFW.

A. Review and Hearing Procedures

1. The dean of students shall determine in each individual case whether it shall be handled through this policy or through other student disciplinary procedures.
2. A student may be requested in writing and/or orally (depending upon the urgency of the situation) to attend an informal meeting with the dean of students and an IPFW counselor for the purpose of determining the seriousness of the student's condition and, if so, the necessity for withdrawal. Such a request will include a statement of the reasons for IPFW concern. Parents, spouses, or other appropriate persons (i.e., faculty, counselors, psychologists, etc.) may be contacted either by the student or by IPFW for information and may, with the consent of the student, participate in the informal meeting. At the meeting the reasons for IPFW's concern regarding the student will be clearly stated, and the student will be given an opportunity to respond to these concerns. If after the meeting the student is found not to have a serious mental disorder, the student will be so informed in writing and allowed to continue as a student.
3. If, after the informal meeting, the dean of students and the IPFW counselor decide that the student should withdraw from IPFW and be permitted to re-enter IPFW only with their approval, the student shall be informed of such decision and the reasons therefore. The student will receive a written notice of the decision and reasons within 10 class days after the informal hearing. If the student agrees to voluntarily withdraw from IPFW on such conditions, regular withdrawal procedures will be followed. However, the student may be permitted to withdraw voluntarily without grades if in the judgment of the dean of students and the IPFW counselor the circumstances warrant such action.
4. If the student refuses to accept the decision of withdrawal reached by the dean of students and the IPFW counselor and refuses to withdraw from IPFW voluntarily, the student shall notify the dean of students of such refusal. The student may then appeal the withdrawal decision to a committee appointed by the chief administrative officer of IPFW, consisting of a faculty member, a student, and an IPFW administrator, other than a member of the staff of the dean of students. The committee shall hear the entire matter again after notice to the student and the dean of students. The issues to be determined by the committee shall be:
(1) whether the student has a serious mental disorder, and (2) if so, whether the student should be involuntarily withdrawn from IPFW. The student and the dean of students and the IPFW counselor may attend the hearing and present evidence and question witnesses. They may be represented by

counsel. The committee may, at its discretion, authorize an independent evaluation of the student by a certified psychologist or licensed psychiatrist at IPFW's expense. The committee shall make a written report containing its findings and conclusions within 10 class days after the hearing. Copies of the report shall be furnished to the student, the dean of students, and the chief administrative officer of IPFW. The decision of the committee shall be binding upon the student and IPFW.

Part V. Student Complaint Procedures

Students having complaints concerning actions or decisions that are claimed to violate rights established under Part I of the Code, the Americans with Disabilities Act, Ethical Guidelines for Computer Users, or HIV/AIDS Guidelines, must first seek to resolve their complaints with the faculty or staff members responsible for the actions or decisions claimed to violate their rights. For a complaint to receive consideration under these procedures, the student must first make a reasonable effort to resolve the complaint informally with the responsible faculty/staff member. The effort to resolve the complaint informally with the responsible faculty/staff member must be initiated by the student in a documented manner no later than the fourth week of the fall or spring semester immediately following the session in which the action or decision which is the basis for the complaint occurred. The document only needs to be dated and indicate that the student has made a good-faith effort at initiating the conversation with the responsible faculty/staff member. If the complaint is not resolved informally between the student and the responsible faculty or staff member, the student may pursue the complaint informally with the faculty or staff member's unit head who shall investigate, mediate, and suggest a resolution. Good-faith efforts will ensure the timely handling of such complaints. For a complaint to continue to receive consideration under these procedures, the student must initiate each successive step in the process within 30 calendar days of conclusion of the previous step. In addition, it is expected that each step the process will be concluded within 30 days of initiation. If the complaint remains unresolved after the unit head's attempt to mediate a resolution, the student may continue to pursue the complaint with the head of the next highest administrative level who shall investigate, mediate, and suggest a resolution. Only after all such remedies have been exhausted may the students request a hearing before the Campus Appeals Board. To request a hearing before the Campus Appeals Board the student must file a formal complaint with the dean of students. The formal complaint must describe the action or decision claimed to violate established rights, identify the right(s) claimed to have been violated, and specify the remedy sought. The dean of students shall direct properly received complaints to the chair of the Campus Appeals Board. The Campus Appeals Board shall have the authority and duty to reach findings and to convey recommendations to the Chancellor of IPFW.

Part VI. Authority, Application, and Amendments

A. Authority

As provided in the IPFW Management and Academic Mission Agreement, "Purdue University shall be responsible for all policies related to student matters. IPFW student rights, responsibilities, and standards of conduct will be established by campus administrators in consultation with the student and faculty government organizations and with the IPFW Community Advisory Council and shall be consistent with the principles established by Purdue and Indiana universities."

B. Application

These regulations, as from time to time amended, shall apply to all undergraduate and graduate students with either IU or Purdue affiliation while enrolled at IPFW and shall be deemed a part of the terms and conditions of admission and enrollment at IPFW. In case of any conflict or inconsistencies with any other rules, regulations, directives, or policies now existing, these regulations shall govern. They shall be enforced by the chancellor of IPFW.

C. Amendments

These regulations, and any amendments hereto, shall take effect on a date prescribed by the Trustees of Purdue University and shall remain in effect until rescinded or modified by them. Amendments may be

proposed at any time by the Indiana-Purdue Student Government Association, Fort Wayne Senate, IPFW administrative staff, Community Advisory Council, or by the Trustees of Purdue University.

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Part 9: Directory

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Administration

France A. Córdova, President, Purdue University

Michael A. McRobbie, President, Indiana University

Michael A. Wartell, Chancellor, IPFW

Joanne B. Lantz, Chancellor Emerita, IPFW

General and Staff Officers

Walter J. Branson, Vice Chancellor for Financial Affairs

William J. McKinney, Vice Chancellor for Academic Affairs

George S. McClellan, Vice Chancellor for Student Affairs

Jack C. Dahl, Associate Vice Chancellor for Institutional Research and Planning

John C. Dahl, Associate Vice Chancellor for Research and External Support

Douglas W. Townsend, Associate Vice Chancellor for Academic Programs, Director of Graduate Studies

Kathleen L. O'Connell, Associate Vice Chancellor for Faculty Affairs

Mark A. Franke, Associate Vice Chancellor for Enrollment Management

Kenneth C. Christmon, Associate Vice Chancellor for Diversity and Multicultural Affairs

Bruce Busby, Associate Vice Chancellor for Academic Success

Linda L. Ruffolo, Executive Director of Development

Irene A. Walters, Executive Director of University Relations and Communications

Mariah D. Butler, Equal Opportunity Affirmative Action Officer

Patrick A. McLaughlin, Registrar

Deborah M. Conklin, Executive Director of the Division of Continuing Studies

Academic Units

College of Arts and Sciences

Administration L. Balthaser (emerita), Drummond (dean), Legg (associate dean)

Department of Anthropology Andres, Borbieva, Kline, Kuznar (director, center of excellence in decision sciences), McCullough (director of archaeological survey), Odden, A. Sandstrom (emeritus), Sutter

Department of Audiology and Speech Sciences Dalby, Egly, P. Flynn (emerita), L. Hess (chair)

Department of Biology Blumenthal, Bosela, W. Cooper, DeMott, Dhawale, Gillespie, Haddock, Holt (emeritus), Jordan, Kingsbury (chair and director, center for reptile & amphibian conservation & management), Lyng (emeritus), Manalis (emeritus), McLellan, Mourad (graduate program director), Mustafa, Paladino, Peters, Richeson (emerita), D. Ross, Shannon, Tobolski (emeritus), Visalli

Department of Chemistry Berger, Columbia, Cox (emeritus), Duchovic, Ericson, J. Flynn (emeritus), Friedel (emeritus), R. Friedman (chair), Gregory, Kimble, Linn, Longroy (emeritus), V. Maloney, Mayo, Pacer (emeritus), Slack (emerita), Stevenson (emeritus), Tahmassebi, Wartell

Department of Communication Banks, Bermes, Carr (graduate program director), Charlesworth, Cuffy, Dirksen, Dixon (chair), Fullman, Godwin-Starks, Kennedy-Lightsey, uo, Mallin, McCants (emeritus), Stillion Southard, Tankel

Department of English and Linguistics Aasand (chair), Amidon, Anders, Bassett, Blythe, J. Brennan (emeritus), Cain, Crisler, Crismore, Dehr, Devine (emeritus), Farnsworth, Felber (emerita), Fleming, L. Friedman (emeritus), Hile, Hostetter (emeritus), D. Huffman, Hume, Kalamaras, Kaufmann, Kozicki (emeritus), Lin, Minton, Moritz (emeritus), O'Hear (emeritus), R. Ramsey (emeritus), C. Roberts (emerita), L. Roberts, Rumsey, Simon, Standley (emerita), Stapleton (graduate program director), J. Stewart, Sun, C. Thompson, van Nuis (emerita), Web-Sunderhaus, Weller

Department of Geosciences Argast, Chowdhury (emeritus), Dattilo, Drummond, Farlow, Gildner, Isiorho (chair), Pinan-Llamas, Sunderman (emeritus)

Gerontology Program McLorg (director)

Department of History J. Bell (emeritus), Blumenshine (emeritus), Cantor (emeritus), Erickson, Fischer (chair), Gates, Haw, LaVere, Livschiz, C. Scott (emeritus), Schuster, A. Violette (emeritus), R. Weiner

Department of International Language and Culture Studies Benito, Bugel, Clausen (emerita), Clegg, Conforti, Corbin (chair), Fox (emerita), Harroff (emeritus), Jehle (emeritus), R. Johnson (emeritus), Oberstar (emeritus), L. Roberts, S. Roberts, Seiler (emerita), Summers, Virtue, Zepeda

Journalism Program Colbert (coordinator)

Liberal Studies Program Kaufmann (director)

Department of Mathematical Sciences Akkari, Beineke, S. Berry, Bulmahn (emerita), Chauhan, Coffman, Conn (emerita), Coroian, Deng, Dragnev, Finco (emeritus), Frederick, Hamburger (emeritus), Hersberger, LaMaster, Legg (chair), Lipman, Mau, Osowski, Pan, Pippert (emeritus), Reba, Redett, Svoboda (emeritus), D. Townsend, Vandell, J. Vetter, Wagner, Walsh, C. Weakley, W. Weakley (graduate program director), Zook, Zubovic

Peace and Conflict Studies Program Ashton (director)

Department of Philosophy Bruening, Buldt (chair), Butler, Dixie, Fairchild (emeritus), Long, McKinney, D. Moore, Ohlander, Spath, Squadrito, Strayer

Department of Physics Grove, Lichti (emeritus), Littlefield (emeritus), D. Maloney, Masters (chair), Miers (emeritus), Robinson, Vasquez, Wang

Department of Political Science Bartky, Coufoudakis (emeritus), A. Downs (director of Mike Downs Center for Indiana Politics), Hannah, Houseman (emeritus), Lutz (chair), Smulkstys (emeritus), Toole, Ulmschneider, Wolf

Department of Psychology Abbott, Bendele, Blakemore (chair), Bordens, DeFonso (emerita), DiClementi, Drouin, Fazel (emeritus), Fliotics (emeritus), Gerow (emeritus), C. Hill, Jackson, Kaiser, Kepes (emeritus), Lantz (emerita), Lawton, Lundy, D. Miller, Ross, Vartanian, Young

Department of Sociology Ashton, Bradley, De Venanzi (graduate program director), Holland, Iadicola, Nusbaumer, Overton, Shupe, Taub, Tsai (emeritus), Usman (emeritus), Yamada

Women's Studies Program Badia (director)

Richard T. Doermer School of Business and Management Sciences

Administration Byers (director of student center), O. Chang (dean), J. Moore (associate dean),

Department of Accounting and Finance O. Chang, D. Davis (emerita), S. W. Davis, Di, Hanke, K. Kauffman, Minke, Mitchell (emerita), Papiernik, Pfeffenberger (emeritus), Pollock (chair), Reffeitt, Sharma, Slaubaugh

Department of Economics Adilov, Bialik, Bullion (emeritus), Dilts, Guthrie (emeritus), Haber (emeritus), Kessler, M. Kim, Rassuli, Samavati, Stumph

Department of Management and Marketing Berry (emeritus), Bingi, H. Gibbons (emerita), Gurgur, R. Hill (emeritus), Hockemeyer (emerita), Karaatli, Karim, Khamalah (chair), Leonard (emeritus), Lingaraj (emeritus), Ma, J. Moore, Moustafa Leonard, Palevich, Person (emerita), Shipchandler (emeritus), Suntonpithug, Todorovic, Wellington

Division of Continuing Studies

Administration Alic (assistant director of distant learning), Conklin (executive director), Fredrick (emeritus), K. Hockemeyer (Web/data specialist), M. Kelly (director of personal and professional development), R. Kingsbury (program coordinator), Marchionni (graphic designer), Mayhall (director of site based credit programs), McCrory (director of small business development center), Miarka-Grzelak (director of marketing), Schaufelberger (ACELINK program coordinator), Schott (director of entrepreneurship and corporate training), Tanner (assistant director of personal and professional development), VanGorder (assistant to the executive director), E. Vitz (director of distance learning)

General Studies Hook (director), McMurtrie (academic advisor)

School of Education

Administration Beard (director of licensing and advising), Cronin (coordinator of advising), Jordan (director of curriculum lab), Kanpol (dean), Murphey (associate dean), Reynolds (director of field services and student teaching), Kromer (education specialist), R. Wiener (emerita)

Educational Studies Bangel, Choi, Dirkes (emerita), Hickey, Hilpert, Huffman (emerita), Kanpol, I. Kim, Kirby (emeritus), Lee, Lindquist, Madden (emeritus), Merz, Moss, Murphey, J. Nichols (chair), Nowak, Phillips (emeritus), Skelton (emeritus), Swim

Professional Studies Abbott, Agness, Batagiannis, Burg (chair), Cho, Garvey, Keller (emeritus), Leatherman, Nitza, Rodriguez (emeritus), Utesch, Vesley

College of Engineering, Technology, and Computer Science

Administration Albayyari (associate dean), Broberg (associate dean), Mansfield (dean emeritus), Pomalaza-Ráez (associate dean), Voland (dean)

Department of Computer and Electrical Engineering Technology and Information Systems and Technology Barrett, Broberg (associate dean), Detraz (emeritus), H. Gates (emeritus), Gideon (emeritus), Goodman, Hack, Laverghetta, Lin, Luo, Parker, Sanders, G. Steffen (chair)

Department of Computer Science Erbach (emeritus), B. Kim (graduate program director), Leeper (emeritus), D. Liu, Mansfield (emeritus), Modesitt (emeritus), Ng (chair), Petruska, Sedlmeyer, Silver (emeritus), Stanchev, Tanik, Temte, D. Thuente (emeritus), Wolfe, Yoo

Department of Engineering Abu-Mulaweh, Alhassan, Ashur, Bi, Chatterjea (emeritus), C. Chen, Eroglu, K. Johnson (emeritus), Kang, Y. Liu, Mahmoud (emeritus), Mauritzen (emeritus), S. Moor (first year engineering coordinator), Mueller (chair and graduate program director), Njock Libii, Oloomi, Pomalaza-Ráez (associate dean), E. Thompson, Volland, Walter (director center for systems engineering), Wang, Younis

Department of Manufacturing and Construction Engineering Technology and Interior Design Albayyari (chair), Allendorph (emeritus), Curia, Ding, Dupen, B. Franke, Fruchey, Gerdorn (emeritus), Kendall (emeritus), Kubik, Leffers (director construction engineering technology program), Z. Liang, Marshall II, McAleece (emeritus), Messal (emeritus), Mohammed, Narang, Pablo, Perry, Pugh, Quinn (emeritus), Rosencrans (emeritus), Schmidt (emeritus), Tryon (emeritus), Worthley (emeritus)

Division of Organizational Leadership and Supervision Bushong (emeritus), Chandler (emeritus), Clevenger, Creasser (emeritus), Groff, Harp (emerita), Hite (graduate program director), Jiang, Mansour-Cole, McDonald (chair), Montesino, Paddock-Offerle (emerita), Rickert (emerita), Sherr, Travis, Wakley (emerita)

College of Health and Human Services

Administration L. Finke (dean), Hine (director of student success center), Williams (academic advisor), Van De Weg (academic advisor)

Department of Consumer and Family Sciences Knight, Lolkus (director of nutrition), Niser (chair), E. Waters (emerita)

Division of Dental Education Brian, Champion (emeritus), M. Cooper, Foley, Huxoll (emerita), Kracher (chair, director of dental assisting), Leeuw, Mann, Perez, Reininger (emeritus), Ringel (director, dental laboratory technology), Schimmele (emeritus), Stuart, Valliere (director of dental hygiene), Zonakis (emeritus)

Department of Human Services Eber (interim chair), Hawley (emeritus), Parker, Wark

Department of Nursing Ahrens, (graduate program director), Baresic, J. Bauman (academic advisor), Beckman, Cowen (emerita), Crill (emerita), Dannhausen, DeKoninck, Eichenauer (emerita), Erdman (emerita), Fincher (emerita), L. Finke, Franz (emerita), Freiburger (emerita), Funck (emerita), Harges, Hartman, B. Hill (emerita), Jensen, Kaskel, L. Meyer (undergraduate director), Miracle (academic advisor), O'Connell, Reimer, Salmon, Simpson, Sines, Sorge, Sternberger (chair), Tierney (emerita), Walker

Division of Labor Studies (IUPUI Program)

Administration Crouch (noncredit coordinator)

Library

Adkins, M. Baden, Buhr, Codispoti, Garrison, Griffin (emeritus), W. Hunsberger (emeritus), P. Sandstrom, Skekloff, Truesdell (dean), Violette (librarian emerita)

Division of Public and Environmental Affairs

Public and Environmental Affairs Administration

Elias, Fife (graduate program director), Grant (chair), Guthrie (emeritus), Hancock, Kanpol (director), Ludwin (emeritus), Mbuba, Miller, Otani, Owen (emeritus), Ziegler

School of Visual and Performing Arts

Administration O'Connor (dean), Resch (associate dean)

Department of Fine Arts Bradley (emeritus), Ganz, Garcia (emeritus), Goodman (chair), Hrehov, Kruse (emeritus), Lee (emeritus), MsCroskey-Hrehov, McCullogh (emeritus), Ushenko

Department of Music Ator (emeritus), Bean (chair), Bookout, Cooke, Farlow, Greider, Haritun, N. Jackson, K. Johnson, Lydy, Meyers (emeritus), Nicholson, Outland, A. Prickett, T. Prickett, Remissong, Resch, Robertson (emeritus), J. Robinson, Schweikert, Severs, Tescarollo, Vernon, Wright-Bower

Department of Theatre Casazza, Coughlin, DeLancey, Humphrey, J. O'Connell (chair), O'Connor, Ridgeway, Saratore, Troy

Department of Visual Communication and Design Brewer, Campbell, David-West (chair), Elaver, Gabbard, Krist (emeritus), Motz, Murray

Indiana University School of Medicine, Fort Wayne Campus

Administration F. Chang (assistant dean and director)

D. Bell, Hoversland, Koritnik, Merkel, Ragatz (emeritus), Redman, Sweazey, Vilensky, Weber

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Bruce B. Abbott, Associate Professor of Psychology (1978) B.A., University of Toledo, 1972; M.A., Bowling Green State University, 1978; Ph.D., 1980.

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Safwan H. Akkari, Associate Professor of Mathematical Sciences (1988) B.S., Lebanese University, 1977; M.S., University of Tennessee, 1982; Ph.D., Louisiana State University, 1988.

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Deborah A. Alvey, Faculty Records and Budget Administrator (2000)

Stevens R. Amidon, Assistant Professor of English (2003) B.S., Regents College, 1987; M.F.A., Goddard College, 1994; Ph.D., University of Rhode Island, 2003.

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Jeanette R. Anstett, Administrative Assistant to Vice Chancellor for Student Affairs (2002)

Anne S. Argast, Professor of Geology (1985) B.S., University of Rochester, 1978; M.A., State University of New York at Binghamton, 1982; Ph.D., 1986.

Bruce J. Arnold, Manager, Life Science Support Service (1986) B.S., Purdue University, 1975; M.S., Texas A&M University, 1981.

Craig Arnold, Field and Laboratory Supervisor in Archaeological Survey (2007) B.A., Brigham Young University, 1992; B.A., Indiana University, 2003; M.A., University of Wyoming, 2007.

Patrick J. Ashton, Associate Professor of Sociology and Director of Peace and Conflict Studies (1979) B.A., Oakland University, 1972; M.A., Michigan State University, 1975; Ph.D., 1981.

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James D. Ator, Associate Professor Emeritus of Music B.Mus.Ed., Drake University, 1960; M.Mus., Wichita State University, 1964; D.Mus.A., North Texas State University, 1971.

Adam N. Atkinson, Network Systems Programmer (2002) A.S., International Business College, 1998.

Marla M. Baden, Associate Librarian (1999) B.A., Ohio State University, 1979; M.L.S., University of Tennessee, 1981.

William W. Baden, Senior Research Analyst, Institutional Research and Analysis (1986) A.S., Miami University, 1973; B.A., University of Toledo, 1976; M.A., University of Tennessee, 1982; Ph.D., 1987.

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Armond J. Ball, Men's Volleyball Coach and Assistant to the Athletics Director (1980) B.S., Ball State University, 1967; M.A., 1971.

Linda S. Balthaser, Assistant Dean Emerita of the School of Arts and Sciences B.S., University of Indianapolis, 1961; M.S., Indiana University, 1962.

Nancy J. Bangel, Assistant Professor of Education (2007) B.S., Purdue University, 1977; M.S., 2004; Ph.D., 2007.

Barbara Jane Banks, Associate Professor of Communication (1991) B.A., The University of South Florida, 1972; M.A., 1974; Ph.D., The Ohio State University, 1980.

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Carla R. Barrett, Supervisor, Life Science Resource Center (1983) A.A.S., Purdue University, 1982; B.S., 1983; B.S., 1990; M.S., 1998.

Debra K. Barrick, Director of Academic Internships, Cooperative Education and Service Learning (2006) A.A.S., Purdue University, 1977; B.A., Indiana University, 1980.

Robert A. Barrett, Professor of Information Systems and Enrollment Management for Engineering, Technology & Computer Science (1979) A.S., Indiana University, 1974; A.S., 1975; B.S.B., 1977; M.S.B.A., 1979.

Elliot M. Bartky, Assistant Professor of Political Science (1988) B.A., Rutgers University, 1974; M.A., 1979; Ph.D., 1983.

Troy J. Bassett, Assistant Professor of English (2007) B.S., California Institute of Technology, 1994; M.A., University of Kansas, 1996; Ph.D., 2002.

Stella C. Batagiannis, Assistant Professor of Education (2005) B.A., Valparaiso University, 1973; M.S., Indiana University, 1997; Ph.D., Indiana State University, 1984.

Lydia C. Bates, Academic Coordinator, Upward Bound (2004) A.S., Indiana University, 1999; B.S., 2001.

Joanne M. Bauman, Academic Advisor (2001) B.A., Purdue University, 2000.

Robert D. Bean, Professor and Chair of Music (2002) B.Mus.Ed., Mississippi State University, 1976; M.Mus.Ed., 1978; D.A., University of Mississippi, 1981.

James F. Beard, Director of Licensing and Advising (1996) B.S., Fort Wayne Bible College, 1988; M.A., Ball State University, 1997.

Sarah J. Beckman, Associate Professor of Nursing (1989) B.S.N., Ball State University, 1976; M.S.N., Indiana University, 1986.

Steven C. Beering, President Emeritus of Purdue University B.S., University of Pittsburgh, 1954; M.D., 1958.

Lowell W. Beineke, Jack W. Schrey Professor of Mathematical Sciences (1965) B.S., Purdue University, 1961; M.A., University of Michigan, 1962; Ph.D., 1965.

David R. Bell, Associate Professor of Physiology and Biophysics (1988) B.S., Michigan State University; M.S.; Ph.D., University of Alabama.

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Rudy Yovich, Sports Information Director (2003) B.A., Edinboro University of Pennsylvania, 1988.

Laura A. Zeigler, Assistant Director of Admissions (1996) B.S., Pennsylvania State University, 1993; M.S.Ed., Indiana University, 1999.

Karla P. Zepeda, Assistant Professor of Spanish (2007) B.A., Smith College, 1997; M.A., University of Connecticut, 2001; Ph.D., 2008.

Pamela R. Zepp, Computer Support Training Coordinator (1996) B.S., Indiana University, 1996; M.A., Purdue University, 2005.

Lisa Zerkle, Special Events Manager, Physical Plant (2008) B.A., Ball State University, 1989.

Stephen J. Ziegler, Associate Professor of Public and Environmental Affairs (2003) B.S., Texas Christian University, 1991; J.D., Thomas M. Cooley School of Law, 1997; M.A., Washington State University, 2001; Ph.D., 2003.

Peter T. Zonakis, Associate Professor Emeritus of Dental Auxiliary Education D.D.S., Indiana University, 1961.

Dianna L. Zook, Instructor in Mathematical Sciences (1988) B.A., University of Steubenville, 1977; M.A., Kent State University, 1979.

Yvonne M. Zubovic, Associate Professor of Mathematical Sciences (1991) B.S., University of Akron, 1981; M.S., 1983; Ph.D., The Ohio State University, 1988.

Colleges, Schools & Divisions

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160 ~ www.ipfw.edu/as/

The College of Arts and Sciences offers programs and courses in the traditional liberal arts disciplines. In addition to providing students with opportunities to develop skills required for the workplace or for advanced study, it seeks to foster well-rounded development of the individual. The college recognizes the role of nontraditional students at IPFW and makes special efforts to meet their needs.

Graduates of the college's baccalaureate programs should have knowledge and awareness enabling them to be effective citizens and lifelong learners. They are expected to have a working understanding of the knowledge and methodology appropriate for their discipline and should be aware of the major issues in their field and able to communicate field content effectively.

The college's Associate of Arts program with 10 concentration areas serves as an intermediate step toward completion of a baccalaureate degree. The chemical methods Associate of Science program, on the other hand, serves students who are preparing for a career as a chemical technician and is not recommended for students who wish to pursue a bachelor's program.

The service and research missions of the college are those appropriate to a comprehensive regional university. The college is responsible for basic-skills courses in mathematics and oral and written communication, as well as the majority of the courses fulfilling college and IPFW general-education requirements. Faculty engage in research or creative endeavor linked to their teaching as well as to IPFW's role as the regional center for higher education. Through research, faculty maintain their qualifications as teachers and, in their contribution to knowledge in their disciplines, enhance the reputation of the campus. Through research and service, the college seeks to make itself a vital resource for business, industry, public and private education, the arts, and government in northeast Indiana.

Academic Programs

The College of Arts and Sciences offers a broad range of minors, transfer programs, and interdisciplinary certificate programs. Each program with its sponsoring unit in the college is listed below for each degree. If you are undecided about a major within the college, you should, with the help of your advisor, choose courses carefully to assure reasonable progress as you narrow your choices and finally decide on a specific plan of study. If you change your major within the college, your degree requirements and your university affiliation may also change.

All bachelor's degrees require a major of at least 24 credits in courses specified by the major department. Minors include (a) a minimum of 12 credits with at least 8 credits at the 200 level or above; (b) at least half the credits taken as resident credits; and (c) a grade of C or better in each course.

Associate of Arts

An Associate of Arts (A.A.) is available with a choice of 10 concentrations. You can generally apply all credits earned in the A.A. program toward a bachelor's degree with a major in the A.A. concentration area. See Part 5 for A.A. requirements.

Concentration

Biology
English
French
German
History
Mathematics
Political Science
Psychology
Spanish
Women's Studies

Department

Biology
English and Linguistics
International Language and Culture Studies
International Language and Culture Studies
History
Mathematical Sciences
Political Science
Psychology
International Language and Culture Studies
Women's Studies

Associate of Science***Concentration***

Chemical Methods

Department

Chemistry

Bachelor of Arts***Major***

Anthropology
Computer Science
Economics
English
French
Geology
German
History
Interpersonal and Organizational Communication
Media and Public Communication
Philosophy
Political Science
Psychology
Sociology
Spanish
Women's Studies

Department

Anthropology
Mathematical Sciences
Arts and Sciences
English and Linguistics
International Language and Culture Studies
Geosciences
International Language and Culture Studies
History
Communication
Communication
Philosophy
Political Science
Psychology
Sociology
International Language and Culture Studies
Women's Studies

Bachelor of Science***Major***

Biology
Biology Teaching, B.S.
Chemistry, B.S.C.

Department

Biology
Biology
Chemistry

Chemistry Teaching
Geology
Mathematics
Mathematics Teaching
Medical Technology
Physics
Physics Teaching
Speech and Hearing Therapy

Chemistry
Geosciences
Mathematical Sciences
Mathematical Sciences
Biology
Physics
Physics
Audiology and Speech Sciences

Minors

Minor

Anthropology
Applied Ethics
Biology
Chemistry
Communication Studies
Creative Writing
Economics
English
Film and Media Studies
Folklore
French
Geology
German
History
Journalism
Linguistics
Mathematics
Media Production
Philosophy
Physics
Political Science
Professional Writing
Psychology
Public Relations
Religious Studies
Sociology
Spanish
Women's Studies

Department

Anthropology
Philosophy
Biology
Chemistry
Communication
English and Linguistics
Arts and Sciences
English and Linguistics
Arts and Sciences
English and Linguistics
International Language and Culture Studies
Geosciences
International Language and Culture Studies
History
Arts and Sciences
English and Linguistics
Mathematical Sciences
Communication
Philosophy
Physics
Political Science
English and Linguistics
Psychology
Arts and Sciences
Philosophy
Sociology
International Language and Culture Studies
Women's Studies

Certificates

Subject

American Studies
Civic Education and Public Advocacy

Department

Arts and Sciences
Arts and Sciences

Ethnic and Cultural Studies
 Gerontology
 International Studies
 Native American Studies
 Peace and Conflict Studies
 Teaching English as a New Language
 Women's Studies

Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 English and Linguistics
 Arts and Sciences

Research Certificates

Anthropology
 Biology
 Chemistry
 Mathematical Sciences
 Physics
 Psychology

Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 Arts and Sciences
 Arts and Sciences

Transfer Programs

The college's transfer programs in agriculture, journalism, forestry and natural resources, prepharmacy, and preveterinary studies are described in Part 5 of the *Bulletin*. You may also complete at IPFW one or two years of work toward many bachelor's degrees offered by the College of Arts and Sciences at Indiana University Bloomington and by the College of Liberal Arts and the College of Science at Purdue University West Lafayette. If you are planning to complete your degree at another campus, make this interest known the first time you see your IPFW academic advisor.

Preprofessional Programs

The college provides academic advising and programs for students who wish to prepare to compete for admission to professional colleges at one of the public universities in the state or at other institutions. In the list below, the years refer to full-time study, 30 to 32 credits per academic year:

<i>Program</i>	<i>Years</i>	<i>University</i>
Predentistry*	3–4	Indiana
Pre-law	4	Indiana
Premedicine*	3–4	Indiana
<i>Program</i>	<i>Years</i>	<i>University</i>
Pre-optometry*	3–4	Indiana
Prepharmacy 2	2	Purdue
Preveterinary Medicine	2	Purdue

*Although some colleges offer early admission to highly qualified students who have completed 90 credits, most applicants have completed a bachelor's degree. If you think you may qualify for early admission, you should consult your advisor about completing requirements for the bachelor's degree from the College of Arts and Sciences during the first year of professional college.

Academic advising for prepharmacy and preveterinary students is provided in the college office; for pre dental, premedical and pre-optometry students in the Department of Biology; and for prelaw students in the Department of Political Science. If you are not majoring in the department that provides this advising, you should consult the appropriate preprofessional advisor before you see your department advisor to select your courses.

The Science and Engineering Research Semester (SERS)

Students majoring in natural sciences, mathematics, or computer science are encouraged to consider participating in the Science and Engineering Research Semester sponsored by the U.S. Department of Energy. If you are admitted to the program, you spend a fall or spring semester at one of six national laboratories conducting research under the mentorship of a staff scientist or engineer. The laboratories include Argonne in Illinois, Brookhaven in New York, Lawrence Berkeley in California, Los Alamos in New Mexico, Oak Ridge in Tennessee, and Pacific Northwest in Washington state. In addition to being directly involved in research, you also may enroll in one academic course during this semester. Credit for research and course work is determined in consultation with your academic advisor, the department chair, and the SERS campus advisor. Students accepted into the program receive a stipend, housing, and limited travel reimbursement. Inquiries should be initiated at least seven months prior to the anticipated starting date. You should begin planning in your freshman year to reserve time for this opportunity. Eligibility requirements include U.S. citizenship or permanent resident alien status, completion of the sophomore year, and a GPA of 3.00 or higher. For further information, contact the College of Arts and Sciences or the College of Engineering, Technology and Computer Science.

Cooperative Education (Co-Op) Program

Cooperative education provides an opportunity for you to work in an occupation related to your major. In this program, you may alternate between full-time study and full-time employment. Students normally enter the program at the end of their first year or upon completion of the summer session immediately following the first year. Check with your advisor regarding department requirements for eligibility for this program.

Research Certificate

The research certificate provides opportunities for you to engage in active learning opportunities integrating original research and the undergraduate curricula by learning research methods and tools appropriate to your discipline and your research interests within the discipline; by learning the foundations of research in the history, philosophy, and theory of the discipline; by learning advanced communications skills; and by applying these learnings by designing and executing a research study or project and communicating the results to others.

Degree Requirements and Academic Regulations for Students in the College of Arts and Sciences

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to you. Where college regulations are stricter than IPFW regulations, the college regulations apply.

For each of the concentrations for the Associate of Arts, the requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degrees.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- ***COM 114 Fundamentals of Speech Communication***
- ***ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher***
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 (60–63)

Requirements for Associate of Science

Requirements for the Associate of Science in chemical methods appear in Part 5 of this *Bulletin*.

Requirements for Bachelor of Arts

In addition to Areas I through VI of the IPFW General Education program and the requirements for your major, you must satisfy the following college requirements:

1. Parts A through D listed below
2. At least 30 credits in upper-level courses as defined by the departments offering the courses (excluding military science courses).
3. A grade of C or better for all courses counted in the major. At most, one approved course in the major discipline may also count toward IPFW General Education Area II–V requirements. No course in the major discipline may count in Area VI.
4. The IPFW General Education Area I computer literacy requirement for the College of Arts and Sciences is met by completing COM 114, ENG W131, and one additional course selected from the following: CS 106, CS 107, ETCS 160, MA 149, MA 153, MA 154, MA 151, MA 165, MA 166, MA 168, MA 229, MA 230, STAT 125, or an approved departmentally specified course, or completion of STEPS (or successor program).
5. A sufficient number of elective credits to bring the total for graduation to 124.

Part A: English Writing

You must complete ENG W233 or an equivalent second writing course approved for this purpose by the college. Approved equivalents are ENG L202, HIST H217, ILCS I300, POLS Y205, or SOC S260. You must complete both ENG W131 (or equivalent) and your second writing course with a grade of C or better.

Part B: Foreign Language

You must complete the last two courses in one of the sequences listed below (or demonstrate equivalent proficiency). Courses are offered in French, German, and Spanish. You are urged to begin studying a language as soon as possible. For advanced placement and special credit in foreign language, see the additional information for the bachelor's degree.

- FREN F111–F112–F203–F204
- GER G111–G112–G203–G204

- SPAN S111–S112–S203–S204

Part C: Distribution

In addition to the courses used to satisfy part A and B above, you must complete 3 credits in each of the following areas. No credits in your major discipline or in directed study courses may be used to satisfy this requirement.

1. Science and Mathematics. You must complete at least one science course with a scheduled laboratory, and you must also complete with a grade of C or better one mathematics course at the MA 153 level or above, or any other course in the Quantitative Reasoning section of the IPFW General Education requirements except MA 101. If the science and mathematics courses you completed for the IPFW General Education requirements satisfy this requirement, you may select the remaining required course from any of the following disciplines:

Agriculture (FNR 103 only)
 Anthropology (ANTH B200 only)
 Astronomy
 Biology (excluding BIOL 105)
 Chemistry
 Entomology
 Geography (physical geography only)
 Geology
 Mathematics (excluding MA 101, 102, and 103)
 Physics
 Political Science (POLS Y395 only)
 Sociology (SOC S351 only)
 Statistics

2. Social and Behavioral Sciences. Courses from the following disciplines satisfy this requirement:

Anthropology (excluding ANTH B200)
 Audiology and Speech Sciences
 Communication (excluding COM 114, 210, 240, 312, and 316)
 Economics
 English (ENG G205, G206, and G301 only)
 Geography (human, cultural, or social geography only)
 Gerontology (GERN G231 only)
 International Studies (INTL I200 only)
 Journalism (JOUR C200, C300, J300, and J337 only)
 Linguistics
 Political Science (excluding POLS Y395)
 Psychology
 Sociology (excluding SOC S351)
 Spanish* (SPAN S425, S426, and S428 only)
 Women's studies (WOST W210 and W240 only)

3. Humanities. Courses from the following disciplines satisfy this requirement:

Afro-American studies
 American studies
 Architectural Engineering Technology (ARET 210 and 310 only)
 Chinese*
 Classical studies
 Communication (COM 210, 216, 240, 312, and 316 only)
 Comparative literature

English (except ENG G205, G206, G301, P131, W130, W131, W135, W140, W232, W233, W234, W321, W331, W364, W397, W398, and W421)
Film studies
Fine arts (excluding studio courses)
Folklore
French*
German*
History
International Language and Culture Studies
Journalism (excluding JOUR C200, C300, and J300)
Latin American studies
Music (excluding performance/skills courses)
Philosophy
Religion
Russian*
Spanish* (except SPAN S425, S426, and S428)
Theatre (excluding performance/production courses)
Women's studies (excluding WOST W210 and W240)

*excluding courses used to satisfy the Part B requirement

Part D: Cultural Studies

You must complete two approved courses. Courses used to meet the IPFW General Education requirements or the requirements of Part C may also be used to fulfill Part D requirements; however, the credits for those courses count only once toward graduation.

1. Western Tradition. You must complete one of the following 3-credit courses dealing broadly with the Western tradition:

CLAS C205, C405
COM 312
ENG L101, L102
FINA H111, H112
HIST H113, H114
PHIL 110, 112, 240, 301, 331
POLS Y105, Y381, Y382
REL 231

2. Non-Western Culture. You must complete one of the following 3-credit courses dealing exclusively or primarily with a non-Western culture or cultures:

ANTH E320, E321, E330, E335, E340, E341, E345, E401, E405, E420, E445, E455, E457, E462, E470, P360, P370
CMLT C461
ENG L107, L113, L364, L387
FINA H415
FOLK F305, F352
HIST A310–A311, C393, D410, E100, E331, E332, E336, E431, F341, F342, F346, F432, G451, G452, H201, H202, H203, H204, H232, T335
PHIL 330
POLS Y337, Y339, Y340
REL 230, 301

SPAN S246, S412, S471, S472, S477, S479, S480
WOST W301

Requirements for Bachelor of Science

In addition to Areas I through VI of the IPFW General Education program and the requirements for your major, you must satisfy the following college requirements:

1. Parts A and B listed below
2. At least 30 credits in upper-level courses as defined by the departments offering the courses (excluding military science courses)
3. A GPA of 2.00 or higher for all courses in the major department. At most, one approved course in the major discipline may also count toward satisfying IPFW General Education Area II–V requirements.
4. The IPFW General Education Area I computer literacy requirement for the College of Arts and Sciences is met by completing COM 114, ENG W131, and one additional course selected from the following: ETCS 106, CS 160, MA 149, MA 153, MA 154, MA 159, MA 165, MA 166, MA 168, MA 229, MA 230, STAT 125, or an approved departmentally specified course, or completion of STEPS (or successor program).
5. A sufficient number of elective credits to bring the total for graduation to 124.

Part A: English Writing

You must complete ENG W233 or an equivalent second writing course approved for this purpose by the College of Arts and Sciences. Approved equivalents are ENG L202, HIST H217, ILCS I300, POLS Y205, or SOC S260. You must complete both ENG W131 (or equivalent) and your second writing course with a grade of C or better.

Part B: Foreign Language

You must complete two courses at the first-year level (or demonstrate equivalent proficiency) in one language. Students in a teaching program are exempt from the foreign-language requirement. You are urged to begin studying a language as soon as possible. For advanced placement and special credit in foreign language, see the additional information for bachelor's degrees, below.

Additional Information for Bachelor's Degrees

Along with the IPFW academic regulations (see Part 8), the following information applies to all bachelor's degree programs:

1. Special Credit for Foreign Language.

When you begin your foreign language study at the second-semester (113) level or higher, you are eligible to apply for special credit after you successfully complete the course into which you placed. You may receive up to 14 credits of special credit for the courses you skipped.

2. Undistributed Transfer Credit.

Undistributed transfer credit (for courses not equivalent to IPFW courses) may be used to satisfy General Education requirements, distribution requirements, and may be counted in the major. You should contact the college office to confirm the application to your program of any undistributed transfer credit you are awarded.

3. Credit Restrictions.

The following restrictions apply to all Arts and Sciences degrees:

- a. You may count no more than 4 credits in:
HPER activities
- b. You may count no more than 3 credits in:
IDIS courses ENG W135 MA 149, and only by those departments that allow graduation credit for MA 153
- c. You may count no credit in:
Developmental courses such as CHM 100; EDUC X15x; ENG R15x, W11x, and W130; and MA 109, 111, and 113.

Courses that provide only surveys of career opportunities, such as AGR 101, BUS J100, CNT 101, EDUA F300 (except when offered as Invitation to Teaching) and G250, EDUC X210, ETCS 101, ETCS 101, HSRV 100 (1 cr.), HTM 100, IDIS 105, MHT 100 (1 cr.), NUR 101, RHIT 100, SPEA V352, and VM 102.

Courses designed to provide a skill not required to complete the major, such as AHLT Mxxx, AHSP Mxxx; BUFW C124, C125, C293, and X221; BUS K214; DAST Axxx; DHYG Hxxx; OLS 121; and SPV 399.

Courses offered by the former Indiana Division of General and Technical Studies (DGTS).

4. Credit for Military Service.

Up to 9 credits for military service in the armed forces of the United States may be counted toward graduation.

5. Overlapping Content.

You may not count toward graduation any courses or sequences considered to have overlapping content. Such courses are listed below; check this list before registering. This list may not be exhaustive. Please consult with your advisor. If you enroll in a course that appears in the left column, and you have completed any of the courses that are listed to its right, only the most recently completed course will apply toward graduation.

Courses with Overlapping Content

AHSP M195	BIOL 105
BIOL 100	BIOL 108–109 or 117–119 or 250
BIOL 105	AHSP M195
BIOL 108-109	BIOL 100 or 117–119 or 250
BIOL 117-119	BIOL 100 or 108–109 or 250
BIOL 121/122–133/134	BIOL 100 or 108–109 or 117–119 or 250
BIOL 203–204	BIOL 215–216
BIOL 215–216	BIOL 203–204
BIOL 218	BIOL 241–242
BIOL 220	BIOL 221 or 438–439 or 437
BIOL 221	BIOL 220 or 438–439 or 437
BIOL 233–234	BIOL 381–382
BIOL 241–242	BIOL 218
	BIOL 100 or 108/109

BIOL 250	PSY 317
BIOL 317	BIOL 233–234
BIOL 381–382	BIOL 220 or 221 or 438–439
BIOL 437	BIOL 220 or 221 or 437
BIOL 438–439	CS 106, ETCS 106
BUS K200–K211–K212	CHM 104 or 111–112 or 115–116 or 129 or 151
CHM 101–102	CHM 101–102 or 111–112 or 115–116 or 129 or 151
CHM 104	CHM 104 or 101–102 or 115–116 or 129 or 151
CHM 111–112	CHM 104 or 101–102 or 111–112 or 129 or 151
CHM 115–116	CHM 104 or 101–102 or 111–112 or 115–116 or 151
CHM 129	CHM 104 or 101–102 or 111–112 or 115–116 or 129
CHM 151	CHM 321
CHM 224	CHM 255–256 or 261–262
CHM 251	CHM 254–258 or 263–264 or 265–266
CHM 252	CHM 252 or 263–264 or 265–266
CHM 254–258	CHM 251 or 261–262
CHM 255–256	CHM 251 or 255–256
CHM 261–262	CHM 252 or 254–258 or 265–266
CHM 263–264	CHM 252 or 254–258 or 263–264
CHM 265–266	CHM 224
CHM 321	CHM 373–374 or 383–384
CHM 371	CHM 371 or 373–374
CHM 383–384	COM 251
COM 248	JOUR C200
COM 250	COM 248
COM 251	JOUR J300
COM 352	BUS K200–K211–K212, ETCS 106
CS 106	ECON E201
ECON E200	ECON E200
ECON E201	POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307 or 511
ECON E270	STAT 311 or 516
EE 302	ENG L315
ENG L220	ENG L220
ENG L315	ENG L379
ENG L374	ENG L374
ENG L379	ENG W135
ENG W131	ENG W131
ENG W135	ENG W233
ENG W140	ENG W140
ENG W233	BUS K200–K211–K212, CS 106
ETCS 106	MUS Z201
FOLK F254	GEOL G103 or S100
GEOL G100	GEOL G100 or S100
GEOL G103	GEOL G100 or G103
GEOL S100	
	INTL I209
GER G309	HIST A345–A346
HIST A316	HIST A316
HIST A345–A346	HIST E431
HIST E331	HIST E432
HIST E332	IDIS G102 or G103 or G104
IDIS 110	IDIS 110 or G103 or G104
IDIS G102	

IDIS G103	IDIS 110 or G102 or G104
IDIS G104	IDIS 110 or G102 or G103
INTL I209	GER G309
INTL I441	AMST A441
JOUR C200	COM 250
JOUR J300	COM 352
MA 149	MA 153
MA 150	MA 151 or 153–154 or 159
MA 151	MA 150 or 153–154 or 159
MA 153	MA 149
MA 153–154	MA 150 or 151 or 159
MA 159	MA 150 or 151 or 153–154
MA 163–164	MA 165–166 or 227–228 or 229–230
MA 165–166	MA 163–164 or 227–228 or 229–230
MA 175	MA 213–215
MA 213	MA 175 or 215
MA 213–215	MA 175
MA 227–228	MA 163–164 or 165–166 or 229–230
MA 229–230	MA 163–164 or 165–166 or 227–228
MA 261	MA 263
MA 262	MA 321 or 363
MA 263	MA 261
MA 321	MA 262 or 363
MA 363	MA 262 or 321
MUS Z201	FOLK F254
PHIL 112	REL 112
PHIL 330	REL 230
PHIL 331	REL 231
PHYS 131–132	PHYS 152–251 or 201–202 or 218–219 or 220–221
PHYS 152–251	PHYS 131–132 or 201–202 or 218–219 or 220–221
PHYS 201–202	PHYS 131–132 or 152–251 or 218–219 or 220–221
PHYS 218–219	PHYS 131–132 or 152–251 or 201–202 or 220–221
PHYS 220–221	PHYS 131–132 or 152–251 or 201–202 or 218–219
PHYS 241	PHYS 251 or 261
PHYS 251	PHYS 241 or 261
PHYS 261	PHYS 241 or 251
POLS Y101	POLS Y150
POLS Y150	POLS Y101
POLS Y395	ECON E270 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307 or 511
PSY 200	307 or 511
PSY 201	PSY 416
PSY 202	ECON E270 or POLS Y395 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307 or 511
PSY 205	or 307 or 511
PSY 225	PSY 205
PSY 235	PSY 202
PSY 317	PSY 335
PSY 335	PSY 369
PSY 369	BIOL 317
PSY 416	PSY 225
REL 112	PSY 235
REL 230	PSY 200
REL 231	PHIL 112

SOC S351	PHIL 330
SPEA K300	PHIL 331
STAT 240	ECON E270 or POLS Y395 or PSY 201 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307 or 511
STAT 260	307 or 511
STAT 301	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or STAT 240 or 260 or 301 or 303 or 307 or 511
STAT 303	307 or 511
STAT 307	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 260 or 301 or 303 or 307 or 511
STAT 311	303 or 307 or 511
STAT 340	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 301 or 303 or 307 or 511
STAT 511	303 or 307 or 511
STAT 512	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307 or 511
STAT 516	303 or 307 or 511
WOST W200	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 511
WOST W210	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 511
	EE 302 or STAT 516
	STAT 512
	ECON E270 or POLS Y395 or PSY 201 or SOC S351 or SPEA K300 or STAT 240 or 260 or 301 or 303 or 307
	STAT 340
	EE 302 or STAT 311
	WOST W210
	WOST W200

Upper-Level Courses

All courses numbered 300 or above are considered upper-level courses. In addition, the following 200-numbered courses, defined as upper level by the departments offering them, may be included in the 30 credits in upper-level courses required for graduation.

BIOL 215
 CHM 218, 224, 254, 255, 256, 258, 261, 262, 265, 266, 275, and 290
 ENTM 206-207
 GEOL G213, G221, and G222
 MA 261, 263, and 275
 PHYS 270
 PSY 201, 203, 205, 235, 240, and 272
 REL 230 and 231

Correspondence Study

Departments may approve enrollment in correspondence-study courses by students pursuing their majors. After you obtain a signature indicating departmental approval, you must bring the enrollment form to the College of Arts and Sciences for authorization to enroll.

Academic Load

You may register for more than 18 credits per semester or 7 credits in a six-week summer session only if: (1) your most recent semester GPA is 3.00 or higher, (2) you have no incomplete grades at the time of registration, and (3) you obtain approval of a dean of the college.

Pass/Not-Pass Option

The following restrictions are in addition to those in the IPFW academic regulations in Part 8 of this *Bulletin*:

1. You must be classified as a sophomore or higher and must have a GPA of 2.50 or better.
2. You may take no more than two courses per year under the Pass/Not-Pass Option. Summer-session enrollments are counted as part of the preceding academic year for the purpose of this restriction.

Academic Renewal Option

The College of Arts and Sciences participates in the Academic Renewal option for eligible students returning to IPFW after an absence of five or more years. See your advisor for additional details.

Changing Major Within the College

If you change your major within the college, your college requirements will be those specified in the *Bulletin* in effect at the time the change becomes effective.

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 243 ~ 260-481-6839 ~ www.etc.ipfw.edu

The objective of the College of Engineering, Technology, and Computer Science (ETCS) is to be an increasingly valuable technological resource for its students, and to serve society as an integral component of a unique and comprehensive university with vigorous regional ties and a growing national reputation. Within the broader mission of the university, the college's goal is to prepare technicians, technologists, computer professionals, and engineers, and to provide its students with opportunities to develop fundamental skills, knowledge, and a professional attitude. The College is also the academic home for Military Science faculty members who offer courses in the Army ROTC program that leads to commissioning as an Army Officer.

ETCS offers degree programs in many areas related to computer science, engineering technology, engineering, and leadership. Courses for these programs range from the study of fundamentals to practical, real-world, industrial methods.

Academic Programs

Full descriptions of the college's certificate and degree programs appear in alphabetical order in Part 5 of this *Bulletin*.

Associate of Science

Subject

Architectural Engineering
Technology
Civil Engineering Technology

Department

Manufacturing & Construction Engineering Technology and Interior
Design
Manufacturing & Construction Engineering Technology and Interior

Electrical Engineering Technology
 Industrial Engineering Technology
 Information Systems
 Interior Design
 Mechanical Engineering Technology
 Organizational Leadership and
 Supervision

Design
 Computer and Electrical Engineering Technology & Information Systems
 and Technology
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Computer and Electrical Engineering Technology & Information Systems
 and Technology
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Organizational Leadership and Supervision

Bachelor of Science

Subject

Civil Engineering (B.S.C.E.)
 Computer Engineering (B.S.Cmp.E.)
 Computer Engineering Technology
 (B.S.)
 Computer Science (B.S.)
 Construction Engineering Technology
 (B.S.)
 Electrical Engineering (B.S.E.E.)
 Electrical Engineering Technology (B.S.)
 Industrial Engineering Technology (B.S.)
 Information Systems (B.S.)
 Interior Design (B.S.)
 Mechanical Engineering (B.S.M.E.)
 Mechanical Engineering Technology
 (B.S.)
 Organizational Leadership and
 Supervision (B.S.)

Department

Engineering
 Engineering
 Computer and Electrical Engineering Technology & Information
 Systems and Technology
 Computer Science
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Engineering
 Computer and Electrical Engineering Technology & Information
 Systems and Technology
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Computer and Electrical Engineering Technology & Information
 Systems and Technology
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Engineering
 Manufacturing & Construction Engineering Technology and Interior
 Design
 Organizational Leadership and Supervision

Certificate

Subject

Advanced Microprocessors
 Computer Controllec Systems
 Computer Networking
 Electronic Communications
 Quality
 Supervisory Leadership

Department

Computer and Electrical Engineering Technology & Information Systems and Technology
 Computer and Electrical Engineering Technology & Information Systems and Technology
 Computer and Electrical Engineering Technology & Information Systems and Technology
 Computer and Electrical Engineering Technology & Information Systems and Technology
 Manufacturing & Construction Engineering Technology and Interior Design
 Organizational Leadership and Supervision

Minor

Subject

Computer Science
Electronics
Informatics
Information Systems
Organizational Leadership and Supervision

Department

Computer Science
Computer and Electrical Engineering Technology & Information Systems and Technology
Computer Science
Computer and Electrical Engineering Technology & Information Systems and Technology
Organizational Leadership and Supervision

General Degree and Certificate Requirements

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to students in the college. Where the college regulations are stricter than IPFW regulations, the college regulations apply.

Certificates and Associate Degrees

Requirements for certificates and Associate of Science degrees offered by the college are specified in the college's departmental listings.

Bachelor's Degrees

In addition to the requirements of IPFW (see Part 8) and those of your elected major, you must satisfy the following requirements of the College of Engineering, Technology, and Computer Science:

1. Earn a minimum of 124 credits.
2. Earn a graduation GPA of 2.00 or better in courses required for the major that are offered by the major department.
3. Satisfactorily complete ENG W131 or an equivalent English composition course with a grade of C or better.
4. Satisfactorily complete any additional degree requirements defined by individual departments based upon respective accrediting body criteria.

No credit toward graduation will be given for (a) courses or sequences considered to have overlapping content (see listings, College of Arts and Sciences) and (b) developmental courses such as ENG W129; and MA 109, 113.

Cooperative Education (Co-Op) and Related Programs

The college's departments offer many options for Cooperative Education experiences. Regular co-op positions, work-study internships, and practicum positions are available and many departments offer laboratory or teaching assistantships. You should check with your department for these opportunities.

College of Health and Human Services

Neff Hall 142 ~ 260-481-6967 ~ www.ipfw.edu/hhs/

The mission of the College of Health and Human Services is to provide the highest quality education to future and current healthcare and hospitality practitioners by providing a learning environment that supports the development of culturally competent caring, compassionate, and accountable professional. Our undergraduate and graduate programs prepare graduates who are dedicated to the autonomy, dignity, and diversity of the people they serve.

The College is committed to excellence in teaching, service and scholarship and to the elimination of health disparities in our community. Our graduates will value lifelong learning and have a professional work ethic based on professional standards and best practices. The College of Health and Human Services specifically identifies and addresses the ever-changing health and hospitality needs of the community served by Indiana University-Purdue University Fort Wayne (IPFW) through service, leadership, and the development of knowledge.

Available degrees and certificates are listed below.

Associate of Science

Subject

Dental Hygiene
Dental Laboratory Technology
Nursing
Radiography

Department

Dental Education
Dental Education
Nursing
College of Health and Human Services

Bachelor of Science

Subject

Hospitality Management
Human Services
Nursing

Department

Consumer and Family Sciences
Human Services
Nursing

Certificate

Subject

Critical Care Nursing
Dental Assisting

Department

Nursing
Dental Education

Minor

Subject

Human Services

Department

Human Services

Transfer Options

Subject

*Child Development and Family Studies
~Clinical Laboratory Science
~Cytotechnology
*Dietetics
~Health Information Administration

Department

Consumer and Family Sciences
College of Health and Human Services
College of Health and Human Services
Consumer and Family Sciences
College of Health and Human Services

~Medical Imaging Technology
~Nuclear Medicine
~Occupational Therapy
~Paramedic Sciences
~Physical Therapy
~Radiation Therapy
~Respiratory Therapy
*Retail Management

College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
College of Health and Human Services
Consumer and Family Sciences

* Purdue-West Lafayette
~Indiana University-Indianapolis

To complete any of the above programs, you must fulfill the requirements of IPFW (see Part 8), the College of Health and Human Services, and the specific program. Where school or department regulations are stricter than IPFW regulations, the stricter regulations apply.

Academic Renewal Option

Many of the degree programs offered by the school provide the Academic Renewal Option for eligible students returning to IPFW after an absence of five or more years.

See your advisor before or during the first semester you return for additional details.

Special Academic Regulations for Students in the College of Health and Human Services

Professional, mature conduct is expected of all students. Any form of academic or personal misconduct is in direct conflict with professionalism and will result in dismissal from the program in which the student is enrolled. Please refer to the current IPFW *Bulletin* regarding "Code of Student Rights, Responsibilities, and Conduct."

The College of Health and Human Services chooses the most stringent course of action regarding misconduct. A student dismissed from his or her program will also be dismissed from the College of Health and Human Services.

Following University guidelines, after two years a student who has been expelled from IPFW may petition for readmission to the University, program, and College. This does not assure the student will gain readmission.

Criminal-record Screens are conducted in all health and human services majors. Agencies may not accept a student who has a criminal record. In addition, students who have a record of a sex crime against a child may not be placed into a clinical in which there is an actual or potential possibility that they will come into contact with children (IC 5-2-12-12). Students who cannot be placed into clinicals due to their criminal records may not be able to graduate from the program and are advised to pursue a nonclinical degree.

Technical Standards for Admission and Retention of Students

Nonacademic criteria (technical standards) that all applicants/students are expected to meet vary by degree program. These standards include the following five categories: (1) observation; (2) communication; (3) motor-function; (4) intellectual-conceptual, integrative and quantitative abilities and (5) behavior and social attributes. For more information visit our web site for technical standards at <http://www.ipfw.edu/hhs/resources/standards.shtml>.

College of Visual and Performing Arts

Visual Arts Building 102 ~ 260-481-6977 ~ www.ipfw.edu/vpa/

The mission of the IPFW College of Visual and Performing Arts is to (1) provide exceptional professional and liberal arts degree programs that combine development in an artistic discipline and career preparation in the arts to students through individualized instruction within a broadly based curriculum, (2) offer culturally enriching opportunities to all students and members of the university community, and (3) be recognized as the center for arts education, outreach, collaborations, and professional leadership in northeast Indiana as well as a major regional arts resource through excellence in artistic performances, productions, exhibitions, library holdings, and technology. To support this mission, the faculty of the college of Visual and Performing Arts subscribe to the highest academic, artistic, and ethical standards for themselves and their students.

The college is composed of the departments and program areas of fine arts, visual communication and design, music, and theatre and includes faculty associated with both Indiana University and Purdue University. More than 600 students majoring and minoring in the visual and performing arts receive instruction from professional and academic staff that include 32 full-time faculty, 9 half-time continuing lecturers, and more than 50 limited-term lecturers and visiting artists.

The college offers the following academic programs:

Associate of Science

Subject

Commercial Art

Department/Program

Visual Communication and Design

Bachelor's Degrees

Subject

Art Education (B.A.)

Fine Arts (B.A. and B.F.A.)

Fine Arts (B.F.A.)

Music (B.Mus. and B.S.)

Music Education (B.Mus.Ed.)

Music Therapy (B.S.M.T.)

Theatre (B.A.)

Theatre Teaching (B.A.)

Department/Program

Fine Arts

Fine Arts

Visual Communication and Design

Music

Music

Music

Theatre

Theatre

Certificate

Subject

Piano Pedagogy

Department/Program

Music

Minor

<i>Subject</i>	<i>Department/Program</i>
Art History	Fine Arts
Dance	Theatre
Music	Music
Studio Art	Fine Arts
Theatre	Theatre
Theatre Teaching	Theatre

The above programs are described in Part 5 of this *Bulletin*.

As a regularly admitted student, you must follow the degree requirements and the college and program academic regulations specified in the Bulletin in effect at the time you first enrolled in the college. If you wish to follow the degree requirements specified in a later edition of the Bulletin, you must consult with your departmental advisor.

Departments and program areas reserve the right to publish new academic requirements and regulations at the beginning of an academic year. If such changes occur, newly admitted students will be subject to the revised requirements.

Academic Renewal Option

The College of Visual and Performing Arts participates in the Academic Renewal Option for eligible students returning to IPFW after an absence of five or more years. See your advisor for additional information.

Division of Continuing Studies

Kettler Hall 145 ~ 260-481-6619 ~ www.ipfw.edu/dcs

The mission of the Division of Continuing Studies is to provide high-quality lifelong learning opportunities for the residents of northeast Indiana.

Course work from this division is offered for academic credit, corporate training, and personal and professional development. For the convenience of students and employers, programs are organized on and off campus and include distance learning via Internet and television.

The academic programs in the Division of Continuing Studies are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

<i>Subject</i>	<i>Program</i>
General Studies	Associate of Arts in General Studies (A.A.G.S.)
General Studies	Bachelor of General Studies (B.G.S.)

Division of Labor Studies

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

Through the Division of Labor Studies, Indiana University offers a Certificate in Labor Studies, a minor in labor studies, an Associate of Science in Labor Studies, and a Bachelor of Science in Labor Studies. Each combines work in a core of labor studies subjects with courses in other disciplines.

As a discipline, labor studies deals with work, the workplace, and workers and their organizations. It advances a body of knowledge that reflects the concerns of modern labor organizations.

As a program, labor studies enables participants to serve more effectively as members and leaders in their organizations. Participants can also gain a sense of the past and present contexts of work and unionism. Because union leaders need to be familiar with economics, communications, and other subjects, labor studies can assist them in mastering a broad range of learning.

The program encourages participants to make socially useful choices in carrying out the many responsibilities of union membership, union leadership, and community citizenship.

The Division of Labor Studies reports to IUPUI administration through the Indiana University School of Social Work.

Each labor-studies program enhances the knowledge and skills of those active in organized labor. Completion of a program enhances your ability to apply knowledge and skills in unions, government agencies, or educational institutions.

Admission For admission to any of these programs, you must apply directly to the labor-studies office.

General Program Requirements Both of the following degrees and the certificate in labor studies require satisfactory completion of 15 credits from among the Labor Studies Core and additional credits from among three Required Areas of Learning (see listings below). Courses in which you earn a grade of D will count only as electives.

Division of Public and Environmental Affairs

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The Division of Public and Environmental Affairs (DPEA) is a multidisciplinary division affiliated with the Indiana University School of Public and Environmental Affairs (SPEA). DPEA is organized as a professional division, committed to teaching, research, and service. DPEA offers a Bachelor of Science in Public Affairs (B.S.P.A.) degree program that provides a sound general baccalaureate education combined with specialized study. Additionally, DPEA offers minors in criminal justice and public affairs. DPEA's multidisciplinary faculty and curriculum address environmental, health, public policy, and management issues from a variety of perspectives.

The academic programs in the division are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

Subject

Criminal Justice
Public Affairs
Public Affairs: Criminal Justice
Public Affairs: Environmental Policy
Public Affairs: Health Services Administration
Public Affairs: Legal Studies
Public Affairs: Public Management

Program

Minor
Minor
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.
B.S.P.A.

Admission

Admission to DPEA requires sophomore standing and a minimum cumulative grade-point average of 2.30, and completion of ENG W131, the required mathematics course, the computer literacy course(s), and the specific SPEA core course for the major. However, you may enter into the division as a pre-SPEA student as early as your freshman year. You must be in good academic standing (cumulative GPA of 2.00 or higher, core/concentration/major GPA of 2.30 or higher) to qualify for an internship and to graduate.

Special Academic Regulation for Students in Public and Environmental Affairs

Requirements for the undergraduate degree should be completed within 10 years of admission to SPEA. You may transfer no more than 90 credit hours (60 credits from a junior college) toward a Bachelor of Science degree program. A maximum of 10 credits will be awarded on the basis of military training toward any degree from DPEA. With prior approval, you may take three courses totaling no more than 10 credit hours by correspondence through the IU Division of Extended Studies, Independent Study Program. However, you cannot satisfy a core, concentration, or major requirement by correspondence.

Good Standing in DPEA requires that you maintain a minimum semester and cumulative GPA of 2.00 and a minimum core/major GPA of 2.30. Therefore, you will be placed on academic probation if your semester, cumulative, or core/concentration GPA at the end of any regular semester is lower than these minimum standards. Once on probation, you may be dismissed from DPEA and IPFW if you fail to make significant progress toward good standing or if you fail to meet the minimum IPFW standards listed in Part 8 of this Bulletin.

DPEA Internships

As a DPEA major, you may earn a maximum of 12 hours of elective credit during your junior and senior years through the DPEA internship program, if you are a student in good standing and have obtained prior approval from the Internship Coordinator. Internships are strongly encouraged because they give you the opportunity to apply classroom theory and techniques to the real world and to network with professionals in your career field. The program is designed for maximum flexibility so that many valid learning experiences can qualify as internships. Internships can be full or part time, paid or unpaid, credit or noncredit. Interested students should contact the Coordinator of Advising and Student Services at the DPEA office for further information about internships.

Special Opportunities for Students in Public and Environmental Affairs

The IU School of Public and Environmental Affairs offers opportunities to study in Washington, D.C., through the Washington Leadership Program, as well as opportunities to study abroad through programs in The Netherlands and Australia. You should contact the DPEA office for current information about these programs.

The Accelerated Master's Program (AMP) is a competitive program for outstanding undergraduate DPEA students. If you have a GPA of 3.50 or higher, you may apply to the AMP program as early as your junior year. This program allows you to fulfill up to 24 credit hours toward the M.P.A. graduate program or 18 credit hours toward the M.P.M. graduate program by taking graduate-level SPEA courses during your senior year that can count toward both your undergraduate program and a future graduate degree program.

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms/

Note:

The Richard T. Doermer School of Business and Management Sciences is in the process of continual curriculum assessment and revision. Specific courses, programs, and degree requirements may change substantially during the life of a printed medium such as this *Bulletin*. You should consult your advisor about possible changes and opportunities.

General Information

The mission of the Richard T. Doermer School of Business and Management Sciences is to prepare students, primarily from northeast Indiana, for professional business careers of increasing responsibility and leadership in a global society.

To accomplish this mission, the role of the school's faculty, as a scholarly community, is

- to develop and deliver high-quality instruction
- to maintain a strong commitment to applied scholarship, with a secondary emphasis on instructional development and basic scholarship, all appearing in media of quality, and
- to share its scholarly expertise with the business community, the profession, and other constituents.

The mission reflects a continuing commitment to the importance of learning in a changing environment, supported through the interdependence of teaching, intellectual contributions, and service.

Academic Programs

The academic programs in the school are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

Subject

Accounting
Business
Business
Business Studies

Program

Post-Baccalaureate Certificate
Bachelor of Science (B.S.B.)
Associate of Science (A.S.B.)
Minor

School of Education

Neff Hall 250 ~ 260-481-4146 ~ www.ipfw.edu/educ

The mission of the School of Education is to prepare professionals in teaching, counseling, and leadership who demonstrate the capacity and willingness to continuously improve schools and related entities so that they become more effective with their clients by:

- Becoming more caring, humane, and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technological and critical literacies, and effectively communicating with all stakeholders.

The academic programs in the School of Education are listed below. Requirements for these programs appear in Part 5 of this *Bulletin*.

The School of Education at IPFW offers B.S.Ed. degrees in elementary education and secondary education, and an A.S. in early childhood education. B.S.Ed. degrees are divided into four concentrations based on developmental levels. They are divided under the following:

<i>Concentration</i>	<i>School Setting</i>
<i>Elementary:</i> Early Childhood (EC)	Preschool and Elementary: Primary (P-3)
Middle Childhood (MC)	Elementary: Intermediate (4-6)
<i>Secondary:</i> Early Adolescence (EA)	Middle School/Junior High (6-8)
<i>Select two content area minors: language arts, mathematics, science, social studies</i>	
Adolescence/Young Adulthood (AYA)	High School (9-12)
<i>Select one content area major: earth/space sciences, French, German, language arts, social studies, Spanish</i>	

The School of Education also offers minors/certifications in each of the content areas listed above (except AYA social studies) and the following:

Chemistry
 Computer Education (endorsement for elementary or secondary)
 English as a New Language
 Life Sciences
 Mathematics
 Mild Intervention (certificate for elementary or secondary)
 Physical Science
 Physics
 Theatre

In addition the following teaching majors are available at IPFW through the following colleges:

<i>Major</i>	<i>College</i>
Art Education (P-12)	Visual and Performing Arts
Chemistry Teaching	Arts and Sciences
Life Sciences Teaching	Arts and Sciences

Mathematics Teaching
Music Education (P-12)
Physics

Arts and Sciences
Visual and Performing Arts
Arts and Sciences

Teaching majors can also be completed as a part of the following B.A./B.S. programs:

Major

English
French
German
Spanish

College

Arts and Sciences
Arts and Sciences
Arts and Sciences
Arts and Sciences

Transition to Teaching

The School of Education also has an alternative route to teacher certification called Transition to Teaching for students who have already earned a baccalaureate degree. This one-year intense program offers teacher certification for elementary and secondary licensure at the graduate level. For a list of qualifications, prerequisites, course requirements, and general information, please contact the School of Education's Student Information Center (Neff 243).

Unit of Affiliated Programs

Departments

Accounting and Finance

Program: B.S.

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

Anthropology

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various

cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

Audiology and Speech Sciences

Audiology and Speech Sciences College of Arts and Sciences

Neff Hall 279 ~ 260-481-6410 ~ www.ipfw.edu/aus

Biology

Department of Biology College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The study of biology helps you prepare for careers in research, teaching, industry, government, medicine, medical technology, and several other health-related fields. More than half of all graduates earning a B.S. in biology from IPFW go on to graduate studies, either for advanced degrees or for professional certification.

Biology is among the most interdisciplinary of all sciences and requires a broad background in chemistry, physics, and mathematics, as well as biology. This background enables biologists to study the evolution of life; the manifestations of life from the level of viruses, bacteria, and individual cells to the structure and function of organisms; and the interactions of living organisms with each other and with their environments.

The Department of Biology has extensive facilities for its teaching and research programs, and its 15 faculty represent many different fields within biology. Interested students can participate in research projects or in other forms of scholarly activity with individual faculty members (see Special Assignments in Biology under Options in Biology, below).

An Associate of Arts with a concentration in biology is described under Arts and Sciences in Part 5 of this *Bulletin*. A related program leading to a B.S. is available: life science teaching certification. This is described later in this part of the *Bulletin*. A minor in biology is also available.

Special Regulation for Biology Majors

Time Limit - All biology courses applied toward graduation must be completed within 10 years from the time the first biology course was completed.

Options in Biology

Preprofessional Study

Preprofessional students — those seeking careers in chiropractic, dentistry, medicine, optometry, osteopathy, physical therapy, podiatry, or veterinary medicine — should consult with their preprofessional advisor before deciding what

specific elective courses in biology to take. Under exceptional circumstances, it may be possible for a biology major to begin professional school after completing three years of undergraduate work at IPFW and to receive credit for the final year after completing the first year of professional school. The B.S. is then awarded after the first year of professional school is completed. Detailed and early planning is necessary.

Medical Technology Preparation

After graduating with a Biology degree from IPFW, students may wish to participate in Medical Technology programs that have been certified by Purdue University, such as Parkview Hospital in Fort Wayne. Interested students should work with their advisor to make sure that they fulfill not only the requirements of the biology program, but also the prerequisites of the Medical Technology program. For example, Parkview Hospital currently requires Immunobiology and General Microbiology.

Special Assignments

Students who qualify may elect to do an independent project supervised by a faculty member. With the permission of the faculty member and the department chair, the student can enroll in BIOL 195, BIOL 295 or BIOL 595. The student must work closely with the faculty member to design and complete the project. Credits earned in these courses cannot be used to satisfy A/B-elective requirements, and a maximum of 6 such credits can be used toward graduation as general elective credits.

Cooperative Education (Co-op) Program

Co-op is designed to provide employment experience in an area of your academic interest while you are still enrolled in school. A co-op experience may be repeated. You may earn up to 2 elective credits toward your degree.

Honors Degree in Biology

You may earn an honors degree in biology by achieving an overall GPA of 3.00 or higher and a biology GPA of 3.50 or higher, conducting a two-semester (6-credit) research project, preparing a senior thesis based on the research project, and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Business and Management

SBMS Undergraduate Student Affairs Center

Richard T. Doerner School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

Academic programs leading to degrees in business address the growing need for broadly educated people who have demonstrated high levels of competence in the theories, concepts, and skills of commerce. The Associate of Science and Bachelor of Science business programs are founded on the principle that a university education for business provides the best preparation for successful careers in today's and tomorrow's dynamic, rapidly changing economic environment.

Course Waivers

You may be eligible for waivers of course requirements based upon academic courses taken as part of your bachelor's program if those courses were completed within the past five calendar years.

Special Academic Regulations for Students in Undergraduate Business Programs

Following are the general policies and procedures for students enrolled in business undergraduate programs. In addition to the policies of IPFW (see Part 8), these are intended to maintain the historically high academic standards of undergraduate business programs at IPFW.

Regulations Applying to All Business Undergraduates

The Student's Responsibility

You are responsible for satisfying the graduation requirements specified for your selected program. Thus, it is essential that you develop a thorough understanding of the required courses, academic policies, and procedures governing your academic career. All requests for exceptions to specific requirements must be made in writing and may be granted only by written approval from the appropriate chair or dean.

Academic Renewal Option

The school participates in the Academic Renewal Option for eligible students returning to IPFW after an absence of five or more years. Information about this option appears in Part 8 of this Bulletin.

Maximum Enrollment

The maximum number of credits for which you may enroll during a regular semester is 21. If you wish to enroll for more than 17 credits during a regular semester or more than 6 during a summer session, you must (1) have attained at least sophomore standing and (2) have earned a cumulative GPA of 3.00 or higher. If you qualify and desire to enroll for more than 17 credits during a semester, you must have your status verified and your request approved by your advisor.

Overlapping Courses

You may not count toward graduation any courses or sequences considered to have overlapping content. A list of overlapping courses appears in Part 4 of this Bulletin under the College of Arts and Sciences.

Pass/Not-Pass Grades

This option is available only for courses considered to be elective. You may take up to two courses each semester for a grade of P/NP with a maximum of two such courses each academic year (fall, spring, and summer). You may apply a maximum of 12 credits of pass/not-pass grades toward a bachelor's degree or a maximum of 6 credits toward an associate degree.

Credit by Self-Acquired Competency

IPFW business programs do not award credit for self-acquired competency (experiential credit). Credit awarded on this basis, regardless of its sources, will not apply toward IPFW business degrees.

Academic Probation

You are on academic probation upon completion of a semester or summer session in which you fail to earn a semester GPA of 2.00 or higher. Your university grade report will serve as notification of your probationary status.

Academic Dismissal

You are dismissed from the degree program immediately upon completion of a semester or summer session that results in your cumulative GPA falling below 2.00. Dismissal will not necessarily be preceded by a formal warning, especially if your prior academic work does not indicate a critical situation. Upon verification of your ineligible status, you will be formally notified and given an adequate amount of time to withdraw from any classes for which you are ineligible. Following that, you will be administratively dropped from the specified class(es).

Application for the Degree

At least two weeks before you register for the semester or summer session during which you will complete all requirements for your program, you must inform the school of your intention to graduate. Degree application forms and related instructions are available at the school's Undergraduate Student Affairs Center, Neff 366. Unless you have submitted a degree application by this deadline, your records will not be audited for graduation and you cannot register as a degree candidate.

Additional Regulation Applying to Undergraduates in the A.S.B. Program

Time Limit for Completion of A.S.B.

It is the school's intention that you possess the most current knowledge and skills when you complete the A.S.B. Because of this, you are allowed a maximum of eight regular semesters (four calendar years) to complete this degree. This begins with the semester you are regularly admitted to IPFW. If more than eight regular semesters have elapsed since your admission, you will be required to meet the degree requirements specified in the most current IPFW Bulletin.

Additional Regulations Applying to Undergraduates in the B.S.B. Program

Transfer Credit.

If you transfer from another school to IPFW, you will be granted credit toward a business degree only for courses considered to be equivalent to IPFW courses required in the business programs.

Generally, courses in basic business and economics subjects (freshman- and sophomore-level courses) will be accepted as equivalent only if they are being transferred from regionally accredited institutions.

Courses in advanced business and economics subjects that you have taken at another school during your freshman or sophomore years generally will not be accepted as equivalent to business or economics courses that are available to only juniors and seniors at IPFW. These may be used only as elective credit.

Courses in advanced business and economics subjects that you have taken as a junior or senior within the last four calendar years will be considered equivalent only if the business degree program from which they transfer is accredited by the International Association for Management Education (AACSB).

Requests for equivalency validation of 300/400-level business and economics courses will be considered only after you have been formally admitted to the B.S.B. program and you have provided the SBMS Student Affairs Center (Neff 366) with an official copy of your Indiana University credit-transfer report. Forms for requesting transfer-course equivalency are available at this location.

At least 50 percent of required business and economics credits must be completed at IPFW.

Correspondence Study.

No more than 6 credits earned through correspondence study will be counted toward your undergraduate degree. Business or economics courses taken by correspondence will not apply to undergraduate business degrees. You will not be permitted to enroll for credit in a correspondence-study course during any semester in which you are enrolled for 15 or more credits.

Credit by Examination.

Under very limited circumstances and subject to the following policies, you may be permitted to earn credit by means of a special examination:

1. Credit examinations are not provided for business or economics courses numbered 300 and above.
2. In all cases, your eligibility for a credit examination (for business courses numbered below 300); the type of examination; testing procedures, date, time, and location; and evaluation of your performance are the decision of the appropriate IPFW business or economics department. The decision of the department is final.
3. Credits earned by examination cannot exceed 10 percent of your total degree requirements.
4. You may attempt an authorized credit examination only once.
5. Only those examination scores that equate to a C grade or better will be considered. Only the grade S will be reported for credit earned by examination.

Use of Physical Education Credits.

You may use a maximum of 4 credits of physical education (HPER) courses as elective credits. Grades earned are included in your cumulative GPA.

Time Limit.

To ensure that you will be professionally competitive with other members of your graduating class, you may complete the degree requirements specified in the Bulletin in effect at the time you were formally admitted to the degree program only if

- Progress toward your degree objective has been continuous. If you have not registered for degree-applicable courses as an IPFW business major for a period of one calendar year, you will be considered as not progressing toward your original degree objective. Subsequently, if you qualify for re-entry to an undergraduate business program at IPFW, you must satisfy the admission and degree requirements specified in the IPFW Bulletin that includes your year of re-entry.
- No more than four years have elapsed since your admission to the business degree program. If more than four years have elapsed, your cumulative academic record will be reviewed by the appropriate business or economics department, and you will be required to meet the degree criteria specified in the current IPFW Bulletin. This may result in your having to repeat those courses in which the original content is determined to be outdated.
- The necessary courses or degree programs are available. If the courses that were required at the time of your formal admission to the business degree program are no longer available, you must complete the current replacements for those courses. Should these newer courses require prerequisites you have not taken, you must also enroll for these prerequisites in the appropriate sequence.

Arts and Science Minors.

B.S.B. candidates are encouraged to complete the requirements for minors available through the IPFW School of Arts and Sciences (see Part 4). Completion of your minor will be documented on your official transcript. No more than two minors will be shown.

Special Academic Regulations for P.B.A. Students

Performance Standards With the exception of the minimum GPA for retention, P.B.A. students are held to the performance standards specified for students in undergraduate business programs.

Chemistry

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The Department of Chemistry offers an associate and two bachelor's degree programs: the Associate of Science (A.S.) with a major in chemical methods (listed earlier in this *Bulletin*), the Bachelor of Science (B.S.) with a major in chemistry, and the Bachelor of Science in Chemistry (B.S.C.). Students pursuing one of these bachelor's programs may also be interested in the physical science teaching certification (listed separately in this *Bulletin*).

Communication

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

The Department of Communication offers related bachelor's degree programs in media and public communication and in speech communication teaching and a minor in media production for those students who want more courses in practical skills.

Computer and Electrical Engineering Technology & Information Systems and Technology

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The Department of Computer and Electrical Engineering Technology & Information Systems and Technology (CEIT) offers the Bachelor of Science with a major in computer engineering technology (CPET), the Associate of Science and Bachelor of Science with a major in electrical engineering technology (EET), and the Associate of Science and Bachelor of Science in Information Systems (IS). The CPET and EET programs prepare students for careers as professionals in many areas involving computer systems and electronics, including hardware and software support of industrial and business related electronic and computer systems, industrial networking, Internet and networking control, computer systems, instrumentation, and other emerging technical areas. The IS programs focus on understanding the fundamentals of the discipline of information systems programming, data structure design, business data processing, computer architecture, data communication, and database systems. CPET and EET graduates have titles such as electrical or computer engineer, electrical technologist, computer support specialist, networking support specialist, automation engineer, applications engineer, telecommunications engineer, network support technician/engineer, and network administrator. IS graduates have titles in the fields of information systems such as analyst, programmer, system specialist, administrator, manager, and supervisor. The department has more than 1,100 alumni who hold technical and managerial positions nationwide.

The Associate and Bachelor of Science degrees in Electrical Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology Inc. (TAC/ABET), 111 Market

Place, Suite 1050, Baltimore, MD 21202-4012, telephone 410-347-7700. In addition to the degree programs, the department also offers a minor in electronics, in information systems and certificate programs in advanced microprocessors, computer controlled systems, electronics communications, and computer networking.

Mission

The mission of the department is to offer high-quality undergraduate, graduate, and certificate programs in the areas of EET, CPET, IS and IT. These programs meet regional needs and include credit and noncredit education in areas related to electrical, computer, and information systems and technology. The department seeks to advance and share technical knowledge through teaching and creative endeavors, and to work with regional industries to develop and increase technically knowledgeable human resources.

Computer Science

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

Mission

The department strives to offer students excellent instruction and educational opportunities in computer science and applied computer science.

It endeavors to provide its students a durable technical foundation in an environment of rapid technical change, to enable and promote their professional growth through contact with the best professional practice, and to play a role of resource and technical leadership in the regional communities.

Program Objectives

Graduates of the undergraduate programs must be able to:

- Analyze, design, implement, and evaluate a computerized solution to a real-life problem using appropriate tools.
- Communicate effectively through speaking, writing, and the use of presentation tools.
- Work effectively as a team member.
- Enter a professional computer science/information systems position or an appropriate graduate program.
- Pursue lifelong learning and continued professional development.
- Be aware of ethical and societal concerns relating to computers in society and apply this knowledge in the conduct of their careers.

Note:

Two bachelor's programs in computer science are offered: a B.A. and a B.S. You should review both programs before selecting one.

The degree programs in computer science provide a strong background to students interested in developing software for diverse computer applications. Preparation includes an understanding of programming and problem solving, data

abstraction, computer hardware organization, operating systems, programming language design and translation, and development of large-scale software systems.

Consumer and Family Sciences

College of Health and Human Services

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

The department of Consumer and Family Sciences offers courses in Hospitality Management (HM), Nutrition and Couple and Family Relations which are described in Part 5 of the bulletin. The department offers a Bachelor of Science with a major in Hospitality Management.

Dental Education

Department of Dental Education College of Health and Human Services

Neff Hall 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

Special Academic Regulations for Students in Dental Assisting

Attendance

Because of the experiential learning process used in all dental assisting courses, class attendance is essential and mandatory. Some evening hours are required for additional clinical experiences and professional association meetings.

Physicals and Immunizations

Before beginning clinical courses, students must submit evidence that they have (1) completed an annual physical examination, (2) obtained the required immunizations, (3) completed TB testing, (4) received hepatitis B immunizations and Hepatitis B titer, and (5) hold a current CPR certification at the professional healthcare-provider level with the American Heart Association or the American Red Cross.

Please see Part 5 of the *Bulletin*, College of Health and Human Services Special Academic Regulation for students in health sciences, regarding student withdrawal and criminal records checks.

Special Academic Regulations for Students in Dental Hygiene

Attendance

Class attendance is essential and mandatory because of the experiential learning process used in all dental hygiene courses. Some evening hours are required for additional clinical experiences and professional association meetings.

Physicals and Immunizations

Before beginning clinical courses, students must submit evidence that they have (1) completed an annual physical examination, (2) obtained the required immunizations, (3) completed TB testing, (4) received hepatitis B immunizations, and (5) hold current CPR certification at the professional healthcare-provider level.

Please see Part 5 of the *Bulletin*, College of Health and Human Services Special Academic Regulation for Students in Health Sciences, regarding student withdrawal and criminal records checks.

Economics

Program: B.S.

Department of Economics

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6794 ~ www.ipfw.edu/bms

Educational Studies

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ <http://www.ipfw.edu/educ>

Elementary Education

Special Academic Regulations for Students in Elementary Education

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to elementary education students.

GPA Requirements

Students with a cumulative GPA of 2.50 or higher are automatically admitted to the school. Students with a GPA of 2.00–2.49 who wish to transfer into the school or change their major may be admitted as education premajors. These students will not be eligible for admission to teacher education until they achieve a cumulative GPA of 2.50 or higher.

Developmental Courses

No credit toward graduation is awarded for ENG W129; or MA 109 or 113.

Pass/Not-Pass Option

Permission to elect this option must be requested on a form available from the School of Education. Permission will be granted only if the course will not be used to fulfill any degree requirements other than total credits for the degree.

Correspondence Courses

The school approves limited numbers of credits earned by correspondence study. You may not use more than 18 credits of correspondence courses toward the degree.

Admission to Block 1

In order to be admitted into Block 1, you must earn a B or better in the following courses: ENG W131, COM 114, and EDUC W200. You must earn a C or better in the following courses: EDUC K201 and a quantitative reasoning (math) course, and you must pass EDUA F300. You must pass the Pre-Professional Skills Test (PPST). You must complete 45 credits with a cumulative GPA of 2.50.

For the bachelor's degree, you must complete each course in the education blocks 1, 2, and 3 with a grade of C or better. In blocks 2 and 3 you must have an overall GPA of 2.50 or higher in each block. Elementary education students must complete each general education area with a GPA of 2.00 or higher. Grades earned in each teaching minor and/or concentration must average 2.50 or higher. You must have earned a cumulative GPA of 2.50 or higher to be eligible to receive a B.S.Ed.

Academic Fresh Start

The school has an academic fresh start option to assist students who are returning to college after an absence of five or more years. The policy permits students' recent college performance to determine the GPA required for admission into teacher education.

You must apply for this option after the completion of 12 credits following the admission/readmission to IPFW. For further information, consult with your academic advisor or visit the School of Education Licensing and Advising Center, Neff 243.

Upper-Division Courses

You must complete at least 35 credits at the 300–400 level.

Deadlines

Before you student teach, you must satisfactorily complete a speech and hearing examination prescribed by the School of Education. During the senior year, you must file an application for your degree.

Resident Study

You must complete your final 32 credits at IPFW, with at least 12 of these credits in professional education courses.

Teacher Licensure

To be eligible for initial teacher licensure, you must complete the elementary education requirements for a bachelor's degree, pass the Praxis I and Praxis II exams, complete a criminal history report, and apply for the license.

Early Field Experience Program

If you are pursuing a B.S. in elementary education, you are required to participate in the prescribed field-experience program. Field-experience courses are numbered M101, M201, M301, and M401 and must be taken as shown in the degree-requirements listings.

This distinctive program provides an organized series of courses designed to integrate all professional education courses with field experiences. The program allows you repeated opportunities to participate with teachers/pupils in

classrooms. In the early part of your field-experience program, you are introduced to teaching, educational concerns, goal setting, and professionalism.

Student Teaching

All students expecting to student teach should schedule an appointment and file a completed application in the office of Student Teaching, Neff 243, one year before you plan to student teach. Appointments are available between October to December for students who plan to student teach in the fall semester or January to March for students who plan to student teach in the spring semester. Please do not submit an application unless you actually intend to complete your student teaching during the upcoming school year. Exact dates are available by contacting the office of Student Teaching (Neff 243, 260-481-6457).

Portfolio

All students seeking initial teacher certification must complete and submit a portfolio for assessment. The portfolio is based upon the Interstate New Teachers Assessment and Support Consortium (INTASC) Standards and is used to assess a teacher candidate's knowledge and mastery of the standards. Portfolio checkpoints are seen throughout the program of study with a final assessment taken during the student teaching semester.

Secondary Education

Special Academic Regulations for Students in Secondary Education

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to secondary education students.

GPA Requirements

Students with a cumulative GPA of 2.50 or higher are automatically admitted to the school. Students with a GPA of 2.00–2.49 who wish to transfer into the school or change their major may be admitted as education premajors. These students will not be eligible for admission to teacher education until they achieve a cumulative GPA of 2.50 or higher.

Developmental Courses

No credit toward graduation is awarded for ENG W129; or MA 109 or 113.

Pass/Not-Pass Option

Permission to elect this option must be requested on a form available from the School of Education. Permission will be granted only if the course will not be used to fulfill any degree requirements other than total credits for the degree.

Correspondence Courses

The school approves limited numbers of credits earned by correspondence study. You may not use more than 18 credits of correspondence courses toward the degree.

Admission to Block 1

In order to be admitted into Block 1 you must earn a B or better in the following courses: ENG W131, COM 114, and EDUC W200. You must earn a C or better in the following courses: EDUC K201 and a quantitative reasoning (math) course, and you must pass EDUA F300. You must pass the Pre-Professional Skills Test (PPST). You must complete 45 credits with a cumulative GPA of 2.50.

For the bachelor's degree, you must complete each course in the education Blocks 1 and 2 with a grade of C or better. In Block 2 you must have an overall GPA of 2.50 or higher. Secondary education students must complete each general education area with a GPA of 2.00 or higher. Grades earned in each teaching major and/or minor must average 2.50 or higher. You must have earned a cumulative GPA of 2.50 or higher to be eligible to receive a B.S.Ed.

Academic Fresh Start

The school has an academic fresh start option to assist students who are returning to college after an absence of five or more years. The policy permits students' recent college performance to determine the GPA required for admission into teacher education.

You must apply for this option after the completion of 12 credits following admission/readmission to IPFW. For further information, consult with your academic advisor or visit the School of Education Licensing and Advising Center, Neff 243.

Upper-Division Courses

You must complete at least 35 credits at the 300-400 level.

Deadlines

Before you student teach, you must satisfactorily complete a speech and hearing examination prescribed by the School of Education. During the senior year, you must file an application for your degree.

Resident Study

You must complete your final 32 credits at IPFW, with at least 12 of these credits in professional education courses.

Teacher Licensure

To be eligible for initial teacher licensure, you must complete the secondary education requirements for a bachelor's degree, pass the Praxis I and Praxis II exams, complete a criminal history report, submit a satisfactory portfolio (see below), and apply for the license.

Early Field Experience Program

If you are pursuing a B.S. in secondary education, you are required to participate in the prescribed field-experience program. Field-experience courses are numbered M101, M201, M301, and M401 and must be taken as shown in the degree-requirements listings.

This distinctive program provides an organized series of courses designed to integrate all professional education courses with field experiences. The program allows you repeated opportunities to participate with teachers/pupils in classrooms.

In the early part of your field-experience program, you are introduced to teaching, educational concerns, goal setting, and professionalism.

Student Teaching

All students expecting to student teach should schedule an appointment and file a completed application in the office of Student Teaching, Neff 243, one year before you plan to student teach. Appointments are available between October to December for students who plan to student teach in the fall semester, or January to March for students who plan to student teach in the spring semester. Please do not submit an application unless you actually intend to complete your student teaching during the upcoming school year. Exact dates are available by contacting the office of Student Teaching (Neff 243, 260-481-6457).

Portfolio

All students seeking initial teacher certification must complete and submit a portfolio for assessment. The portfolio is based upon the Interstate New Teachers Assessment and Support Consortium (INTASC) standards and is used to assess a teacher candidate's knowledge and mastery of the standards. Portfolio checkpoints are seen throughout the program of study with a final assessment taken during the student teaching semester.

Early Childhood Education

Special Academic Regulations for Students in Early Childhood Education

In addition to the academic regulations of IPFW (see Part 8), the following rules apply to early childhood students.

Developmental Courses

No credit toward graduation is awarded for ENG W129; or MA 109 or 113.

Pass/Not-Pass Option

Permission to elect this option must be requested on a form available from the School of Education. Permission will be granted only if the course will not be used to fulfill any degree requirements other than total credits for the degree. A.S. students are limited to two courses under this option.

Correspondence Courses

A.S. students may not use more than 9 credits of correspondence courses credit toward the degree.

Grades

You must complete each professional education course with a grade of C or better. You must have earned a cumulative GPA of 2.00 or higher to be eligible to receive the A.S.

Academic Fresh Start

The school has an academic fresh start option to assist students who are returning to college after an absence of five or more years. The policy permits students' recent college performance to determine the GPA required for admission into teacher education.

You must apply for this option after the completion of 12 credits following admission/readmission to IPFW. For further information, consult with your academic advisor or visit the School of Education Licensing and Advising Center, Neff 243.

Resident Study

You must complete your final 32 credits at IPFW, with at least 12 of these credits in professional education courses.

Engineering

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

IPFW offers bachelor's programs in civil engineering, computer engineering, electrical engineering, and mechanical engineering. The computer, electrical, and mechanical engineering programs are accredited by the Engineering

Accreditation Commission of the Accreditation Board for Engineering and Technology Inc. (EAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone 410-347-7700. The civil engineering program is new (fall 2006) and is not yet eligible for ABET accreditation.

Studies in engineering emphasize the practical and analytical aspects of engineering by combining laboratory and lecture courses in the sciences, humanities, and engineering sciences.

Mission

The mission of the Department of Engineering is to support the needs of Northeast Indiana through education, scholarship, and service. We are committed to providing quality educational opportunities to both traditional and non-traditional students and seek to equip our students with the knowledge, skills, and experience to pursue productive engineering careers. Our faculty is also dedicated to excellence in scholarship and service to the community and the profession.

Educational Objectives

The faculty of the engineering department at IPFW is committed to continuous improvements in its engineering programs. As such, the faculty continues to work with the alumni, their employers, and the Industrial Advisory Board to realize the following educational objectives:

- Prepare students for successful careers in industry.
- Develop student expertise in the synthesis process, with an emphasis on product design.
- Provide the opportunity for students to work as a team on multidisciplinary projects.
- Ensure students have a sound foundation in the mathematical, scientific, and engineering fundamentals.
- Promote the importance of professional ethics, value of professional registration, lifelong learning, and professional development.

Admission

To gain admission to the engineering programs, in addition to satisfying IPFW admission requirements (see Part 8) you should rank in the upper half of your high school class and have the following courses on your record:

<i>Subject</i>	<i>Semesters</i>
Algebra	4
Biology or physics	2
Chemistry	2
English	8
Plane geometry	2
Trigonometry	1

Additionally, you must have a minimum SAT I verbal score of 480 and an SAT I mathematics score of 520 for admission to freshman engineering. If you only partially meet the above requirements, you may be admitted to IPFW in a pre-engineering status while taking courses that will prepare you for admission to an engineering program.

Admission deadlines for the Department of Engineering are:

Aug. 1 for the fall semester.

Dec. 15 for the spring semester.

May 1 for Summer Session I.

June 15 for Summer Session II.

Special Academic Regulations for Students in the Department of Engineering

Plan of Study

A one-year plan of study must be approved by your academic advisor every semester to ensure that you are making progress towards graduation.

Concentration Course Grades

You must have a combined GPA of at least 2.00 in all engineering courses and in any other courses used to fulfill technical-elective requirements. It is your responsibility to see that this requirement is met. Even though the grade of D is accepted as a passing grade (except in COM 114, ENG W131, and all mathematics courses where a grade of C or better is required), it is highly recommended that the course be repeated if it serves as a prerequisite to another required course.

Engineering, Technology, and Computer Science

English and Linguistics

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The Department of English and Linguistics offers courses in all periods of British and American literature; in special topics, such as children's literature; and in writing, film study, linguistics, folklore, and mythology. Degree programs in English and minors in creative writing, English, folklore, linguistics, and professional writing are designed for students who desire a humanistic education. The program in English offers excellent preparation for many different careers. Literary study provides a basis for understanding various forms of cultural expression; writing skills are a powerful tool in an age dominated by information technologies; linguistics teaches the structure and function of language; folklore introduces the student to voices otherwise neglected by the dominant culture. The Bachelor of Arts with a major in English is appropriate for someone who wishes to enter a graduate or professional school. Degree options also prepare students for careers in teaching, writing, and business communications.

An Associate of Arts with a concentration in English, offered by the College of Arts and Sciences, is described in Part 5 of this *Bulletin*.

Fine Arts

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

The mission of the Department of Fine Arts is to educate its students and the community in fine art. Degrees offered by the Fine Arts Department are a Bachelor of Arts, a Bachelor of Fine Arts, a Bachelor of Arts in art education, and a fine arts minor. A minor in art history is described elsewhere in this part of the *Bulletin*.

Transfer Credit

All studio art and art history courses transferred from another institution or campus must be evaluated by an appropriate faculty member in the fine arts program before they may be applied to the B.A.

Residence Requirements

At least 33 credit hours including art methods courses must be completed on the IPFW campus.

Special Academic Regulations

Enrollment Policy To ensure that degree-seeking students are guaranteed priority registration in their classes, the following policies will be observed:

- Students who are not progressing toward completion of degree requirements, including students who have graduated but wish to continue a program of study, will be reclassified as nondegree-seeking. These students' registrations will not be processed until the final week before the beginning of each semester. This policy will allow these students an opportunity to avail themselves of classroom opportunities when space is available.
- All 400-level studio courses may be repeated up to a maximum of 18 credits. This long-standing policy is based upon the rationale that six semesters of study at that level in one discipline is sufficient for undergraduate training.
- Independent-study courses are available for students with at least junior standing to pursue studio interests not served in other course offerings. Independent-study courses may be arranged with the appropriate faculty member on the basis of a viable course of study, a reasonable load for the instructor, and space availability. Priority will be given to degree-seeking students and to classes with regularly scheduled meetings.
- Prerequisites for 200-level studio courses may be waived by the appropriate instructor during the week before classes begin, contingent upon space availability. Completion of all prerequisites is required to continue with classes beyond 6 credits in that discipline.

Credit Transfer If you transfer art credits from another college or university, you may be admitted to the B.F.A. or foundation program upon a successful portfolio presentation. To earn the B.F.A. at IPFW, you must fulfill all remaining requirements and complete a minimum of 24 credits of upper-division studio work at IPFW.

Time Limit If you do not complete degree requirements within seven years of matriculation, you may be required to meet the degree requirements specified in the current *Bulletin*.

Student Handbook A departmental student handbook, consisting of policies and regulations of the Department of Fine Arts, has been prepared as a guide for students. This handbook, available in the department office, provides detailed information about responsibilities and a sample curriculum for each degree. All fine arts majors are expected to be familiar with the contents of this handbook.

Bachelor of Fine Arts

Recommendations

Students should schedule classes within the B.F.A. program under the guidance of a visual arts advisor.

Residence Requirements

For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transferred Credit

All studio art and art history courses transferred from another institution or campus must be evaluated by an appropriate faculty member in the Fine Arts Program before they may be applied to a major in fine arts. See Transfer Credit Review.

Transfer Credit Review

Courses in studio art that have been transferred to IPFW from another institution or campus are not counted as part of the fine arts major unless they have been reviewed by the fine arts faculty. For a review of transferred studio credit, the student should provide the reviewer with a portfolio consisting of representative work in each area (e.g., painting, sculpture, etc.) for which transfer credit is desired. The portfolio should include both studies and finished work and be as complete as possible.

Minor in Fine Arts

Resident Requirements

Completion of at least 6 resident credits at the 200 level or above is required for the minor.

Special Academic Regulations

Enrollment Policy To ensure that degree-seeking students are guaranteed priority registration in their classes, the following policies will be observed:

1. Students who are not progressing toward completion of degree requirements, including students who have graduated but wish to continue a program of study, will be reclassified as nondegree-seeking. These students' registrations will not be processed until the final week before the beginning of each semester. This policy will allow these students an opportunity to avail themselves of classroom opportunities when space is available.
2. All 400-level studio courses may be repeated up to a maximum of 18 credits. This long-standing policy is based upon the rationale that six semesters of study at that level in one discipline is sufficient for undergraduate training.
3. Independent-study courses are available for students with at least junior standing to pursue studio interests not served in other course offerings. Independent-study courses may be arranged with the appropriate faculty

member on the basis of a viable course of study, a reasonable load for the instructor, and space availability. Priority will be given to degree-seeking students and to classes with regularly scheduled meetings.

4. Prerequisites for 200-level studio courses may be waived by the appropriate instructor during the week before classes begin, contingent upon space availability. Completion of all prerequisites is required to continue with classes beyond 6 credits in that discipline.

Credit Transfer If you transfer art credits from another college or university, you may be admitted to the B.F.A. or foundation program upon a successful portfolio presentation. To earn the B.F.A. at IPFW, you must fulfill all remaining requirements and complete a minimum of 24 credits of upper-division studio work at IPFW.

Time Limit If you do not complete degree requirements within seven years of matriculation, you may be required to meet the degree requirements specified in the current Bulletin.

Student Handbook A departmental student handbook, consisting of policies and regulations of the Department of Fine Arts, has been prepared as a guide for students. This handbook, available in the department office, provides detailed information about responsibilities and a sample curriculum for each degree. All fine arts majors are expected to be familiar with the contents of this handbook.

Geosciences

Department of Geosciences College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

The Department of Geosciences offers the B.A. with a major in geology and the B.S. in geology with options in geology and environmental geology. These programs help you prepare for employment as a professional geologist or in many technical and nontechnical disciplines unrelated to geology, for teaching earth and space science in middle and secondary schools, or for further study at the graduate level.

The Bachelor of Arts program provides broad experience in the natural sciences, mathematics, humanities and social sciences, providing a spectrum of knowledge to prepare you for many technical and nontechnical fields. The Bachelor of Science program emphasizes technical components. It is particularly well-suited for prospective professional geologists or those expecting to seek advanced degrees in geology. Graduates of this program are finding the nation's oil, gas, and mineral resources; resolving environmental problems of the air, water, and soil; and discovering the ways the physical world works.

Classes in advanced subject areas are typically small, with significant individualized attention from the faculty. Highly qualified students gain valuable experience assisting with faculty research or may be employed by the department as laboratory and teaching assistants. Many geoscience courses include field trips ranging from one day to two weeks. These trips provide opportunities for students to travel and study geology throughout North America.

History

Department of History College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

Courses and programs in history help you gain a better understanding of yourself and your world and prepare you for a career in teaching, library work, law, public service, or a related profession.

The Department of History offers a Bachelor of Arts, an Associate of Arts with a concentration in history, a minor, an Honors Program, and Teacher Certification (see Part 5).

Human Services

Department of Human Services College of Health and Human Services

Neff Hall 130 ~ 260-481-6424 ~ www.ipfw.edu/hs

Students are responsible for current policies found online at www.ipfw.edu/hs/

International Language and Culture Studies

Department of International Language and Culture Studies College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

French

The Department of International Language and Culture Studies offers majors in French for the B.A. and B.A. with teaching certification, a minor and a teaching minor in French, and study-abroad opportunities. An Associate of Arts with a concentration in French, offered by the College of Arts and Sciences, is described in Part 5 of this *Bulletin*.

German

The Department of International Language and Culture Studies offers majors in German for the B.A. and the B.A. with teacher certification, a minor and a teaching minor in German, and study abroad opportunities. The department offers similar programs in French and Spanish, and limited courses in other languages. An Associate of Arts with a concentration in German, offered by the College of Arts and Sciences, is described in Part 5 of this *Bulletin*.

German is the language of a major culture and will be increasingly important in the context of rapid change in Europe early in the 21st century. German-speaking countries influence the arts, journalism, medicine, philosophy, politics, technology, and the world economy. Students with interests in business or international studies are encouraged to learn German. The Department of International Language and Culture Studies offers a full curriculum, including German culture, language, and literature. A major in German may be combined with a major in another field, a business minor, or a teaching certificate. With a major in German and a degree, in particular a B.A., you may continue your education in languages or expand into other fields at a graduate school, or you may pursue a career in business or teaching.

Study Abroad

Both majors and nonmajors are encouraged to study abroad. For those who wish to study German, Indiana University administers and cosponsors an academic-year program in Freiburg, a semester program in Freiburg, and a summer program in Graz (Austria).

Spanish

The Department of International Language and Culture Studies offers majors in Spanish for the B.A. and B.A. with teaching certification, a minor and a teaching minor in Spanish, and study abroad opportunities as well as similar programs in French and German and limited courses in other languages. An Associate of Arts with a concentration in Spanish, offered by the College of Arts and Sciences, is described in Part 5 of this Bulletin.

Spanish is the language of nearly 300 million of the world's people, including many millions in the United States. It is the official language of Spain as well as most of the countries of the western hemisphere. Increasingly, Spanish is a language of commercial, cultural, and political importance in the world. The Department of International Language and Culture Studies offers a full curriculum in the culture, language, and literature of Latin America and Spain. A major in Spanish may be combined with a major in another field, a business minor, or a teaching certificate. With a major in Spanish and a degree, in particular a B.A., you may continue your education in languages or expand into other fields at a graduate school, or you may pursue a career in business or teaching.

Study Abroad

Both majors and nonmajors are encouraged to study abroad. For those who wish to study Spanish, Indiana University administers and cosponsors an academic-year program in Madrid, Spain; semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago); and summer programs in Spain (Salamanca) and Mexico (Cuernavaca and Guanajuato).

Management and Marketing

Program: B.S.

Department of Management and Marketing

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6470 ~ www.ipfw.edu/bms

Manufacturing & Construction Engineering Technology and Interior Design

**Department of Manufacturing & Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

**Engineering, Technology, and Computer Science Building 221 ~ 260-481-4127 ~
www.mcet.ipfw.edu**

Mission

The mission of the MCET is to support the career aspirations of undergraduate and graduate students, and to fulfill the needs of their current and future employers. The department offers, develops, and continuously improves educational programs to meet these needs. The programs are accessible to traditional and nontraditional students, and support

evolving career objectives by emphasizing lifelong learning.

The Department of Manufacturing & Construction Engineering Technology and Interior Design (MCET) in the College of Engineering, Technology, and Computer Science serves the needs of students, industry, and government in northeast Indiana.

The department offers Associate of Science (A.S.) in Architectural Engineering Technology (ARET), Civil Engineering Technology (CET), Industrial Engineering Technology (IET), Interior Design (INTR), and Mechanical Engineering Technology (MET). The Department also offers Bachelor of Science (B.S.) degree programs in Construction Engineering Technology (CNET), Industrial Engineering Technology (IET), Interior Design (INTR), and Mechanical Engineering Technology (MET). The Engineering Technology programs (both A.S. and B.S.) are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology Inc. (TAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone 410-347-7700. The department also offers a certificate in quality.

The primary focus of the department is the development of its students. It encourages students to acquire the knowledge and understanding that helps them contribute to society by leading meaningful and productive lives.

The major thrust of the department is to prepare graduates to understand basic concepts of knowledge, have studied one technical field in sufficient depth to appreciate its methodologies and fundamental unresolved questions, and have acquired a basis for lifelong learning. Attainment of the above is accomplished through the establishment of required courses in (1) a core of general education, (2) required technical courses in the major area, and (3) elective courses combining breadth of subject matter with specific study in depth. Laboratory experience is an essential part of both associate and bachelor degree programs.

Mastodon Advising Center

Mastodon Advising Center Unit of Affiliated Programs

Kettler 109 ~ 260-481-6595 ~ www.ipfw.edu/mac

Professional staff in the Mastodon Advising Center (MAC) provide a supportive environment; offer class scheduling and curriculum information; assist with decision making; and furnish information on time management, study skills, academic planning, and career-related matters. See Part 8: Services, for additional information concerning career assistance.

Special Categories of Students Advised in MAC MAC provides academic advising for students who are admitted in the following special categories.

Exploratory The exploratory program serves students who do not qualify for regular admission and who would benefit from the extra attention offered by the Mastodon Advising Center. Professional advisors in MAC provide information and direction toward special programs and sound academic skills.

Students admitted to the exploratory program work closely with professional academic advisors to ensure that they reach their educational goals. Students in the program must report their academic progress to their advisors, who can help identify any support services that may be needed.

Exploratory students who have completed at least 12 credits and earned a cumulative GPA of 2.00 or higher are in most cases eligible to select an academic major.

Deciding Students Students entering IPFW undecided about major are placed into MAC. While affiliated with MAC these students are given an opportunity to take classes without having to make an early commitment to a major.

Deciding MAC students are encouraged to enroll in career-exploration courses, meet with career counselors in career services, and visit academic units to investigate potential majors.

Premajor Students in Other Areas Students interested in a degree in education, organizational leadership and supervision, or general studies but who have grade-point averages below 2.00 are also assigned to the Mastodon Advising Center. Once these students have earned a cumulative GPA of 2.00 or above and fulfilled any other specific requirements that may be established, they are eligible to select their academic majors. (For pre-education students, the 2.00 cumulative GPA includes grades earned at all institutions they have attended.)

Nondegree Students Students who are visiting or waiting for regular admission to IPFW may be assigned nondegree (guest/temporary) student status and assigned to MAC for course enrollment and related assistance. After earning 24 credits in nondegree status, students may register for additional credits only after applying for and being granted regular admission status through Admissions.

Special Regulation on Readmission If you have been dismissed from IPFW for academic reasons, you are encouraged to discuss readmission procedures with a MAC advisor. IPFW students who have been dismissed and are seeking readmission through MAC must attend a readmission workshop and apply for readmission consideration. Contact MAC for further details.

Mathematical Sciences

Department of Mathematical Sciences College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The Department of Mathematical Sciences offers programs leading to the Bachelor of Science with a major in mathematics and in mathematics teaching, see Part 5 .

Music

Department of Music College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

Music and an Outside Field, Music Education, Music Performance

The Department of Music provides degree programs leading to careers in music, functions as a service department to the university, and serves as a musical center and resource for Greater Fort Wayne and northeast Indiana. The department offers programs leading to the following degrees: Bachelor of Music in performance, Bachelor of Music Education, Bachelor of Science in Music and an Outside Field, and Bachelor of Science in Music Therapy. A minor in music and a certificate in piano pedagogy are also available.

Accreditation

Programs offered by the department are accredited by the National Association of Schools of Music, American Music Therapy Association, and the National Council for Accreditation of Teacher Education.

Admission

One must satisfy the admission requirements of IPFW (see Part 8) and successfully complete an audition and entrance placement exams wherein appropriate faculty committees evaluate a student's musical knowledge, skill, and potential. Students who do not meet all music-department entrance requirements may be admitted to the department as pre-music students. (See *Department of Music Student Handbook* for further information.)

Curricula

To complete a degree in music, one must satisfy the university's general education requirements, Department of Music core requirements, and requirements specific to the degree program.

Special Academic Regulations for Students Majoring in Music

Department Handbook

Detailed information regarding policies and practices of the department is included in the *Department of Music Student Handbook*, available in the department office. Information included below is detailed in the handbook. All music majors are expected to be familiar with the contents of the handbook.

Academic Probation

As a music major, you must earn: (1) a semester GPA of 2.00 and a cumulative GPA of 2.00 or higher; (2) a semester GPA of 2.5 or higher for all music courses required for your degree program; (3) a C or better in a music course or ensemble required for your degree, with the exception of X095 Performance Class. Should you fail to meet these standards, you will be placed on departmental probation.

Students on probation may lose eligibility for scholarships and financial aid, as well as risk dismissal from the program. See the department's student handbook for further information on academic probation.

Dismissal

You will be dismissed from the department when (1) you have been placed on departmental probation due to gradepoint deficiency and do not correct the deficiency in the next semester of enrollment; (2) you have been placed on departmental probation for failure to earn a C or better in a music course required for your degree (with the exception of X095 Performance Class) and do not earn a C or better in your second attempt in the same course; (3) you fail to earn a C or better in two consecutive semesters of the same ensemble.

Readmission

If you are dismissed, you may petition for readmission to the Department of Music one semester from the date of your dismissal. Students returning from dismissal will automatically be on probation. Failure to maintain a 2.5 GPA for the first semester of re-entry or to make a C or better in a required music course will result in permanent dismissal from the department.

Keyboard Proficiency

All music majors must pass a keyboard proficiency examination. Entering students who are prepared to take the examination may do so before registration; all others must register in piano courses until this requirement is satisfied.

The examination tests ability to use the piano as a professional tool. The test is given in portions at the three exam periods each semester and may be taken at other times by special arrangement with the coordinator of the area.

Transfer Credits

Audition and placement exams will be required. You may be accepted by the department with upper-divisional standing.

Upper-Division Standing

During the semester in which you are enrolled in or have successfully completed MUS T214, 216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument, you are eligible and will be expected to take the Upper Division Performance Examination (MUS X296), an applied music performance for the applied music instructor and the resident music faculty. Upon the recommendation of the applied instructor and advisor, the performance examination may be postponed beyond four semesters of study on the primary instrument, but you must achieve eligibility and take the examination by the end of the sixth semester of study. No extensions will be given beyond the sixth semester except in the case of extreme extenuating circumstances and will require the recommendation of the applied instructor and the advisor and approval by the chair of the department. Failure to achieve eligibility does not constitute extenuating circumstances. For complete procedures, see the Department of Music Student Handbook.

Music education majors must complete the Music Education Upper Divisional Examination (MUS X297). Music therapy majors must complete the Music Therapy Skills Examination MUS X298. See the course descriptions for content and prerequisites for these examinations.

Performance Studies for Students Majoring in Music

Primary Performance

Area Performance study (applied music) is required of all music majors and is available for the study of voice, keyboard, winds, strings, and percussion. Students are assigned to applied-music teachers on the basis of instructor availability and suitability. An audition and departmental permission are required. Both a junior and a senior recital are required for the B.Mus. All other degrees require a concentration recital, the required number of semesters of study varying with the degree. To be eligible to perform a recital, you must be enrolled in an applied music course. A successful prerecital hearing is required. For a complete list of guidelines, refer to the *Department of Music Student Handbook*.

Secondary Performance Area

All students must pass the Keyboard Proficiency Examination (X299). Students for whom keyboard is not the primary applied area must enroll in Class Piano (P111, 121, 131, 141) until the examination is completed. If students complete the examination in fewer than four semesters, they will normally complete the credits with further applied study at the 200 level in piano. Study of another instrument or voice is possible, but contingent upon the consent of the degree advisor and the appropriate applied instructor. An audition is required to enter 200-level study. Students whose primary instrument is keyboard will take one semester of Keyboard Skills (P211) and three semesters of 200-level applied study of another instrument or voice. The choice of instrument requires the consent of the degree advisor. An audition is required to enter 200-level study.

Performance Class X095

Music majors are required to enroll in performance class in every semester of enrollment in applied study on their primary instrument. This 0-credit course is a weekly meeting of music majors and minors and serves as a laboratory for performance. Part of the course requirement is attendance at specified public concerts and recitals. Refer to the listing of courses for your degree program for specific information regarding your required minimum number of semesters.

Ensemble Requirements

Music majors are required to enroll in a major ensemble each semester of enrollment in the applied primary. Refer to the listing of courses for your degree program for specific information regarding your required minimum number of ensemble credits. Piano performance majors (Bachelor of Music) may substitute X002 (Accompanying) for two semesters toward this requirement.

Correspondence Study

Limited credit toward your degree may be earned by correspondence study. See your advisor for additional information.

Restriction on Use of University Facilities

University facilities are not to be used for any private enterprises such as teaching.

Time Limit

At the time you are awarded your music degree, it is intended that you be current in the knowledge and skills you have attained. Accordingly, if you do not complete the requirements within seven years of matriculation, you may be required to (1) demonstrate your eligibility to continue in your degree program by passing comprehensive examinations in all music subjects previously completed, and (2) meet the degree requirements specified in the current Bulletin. Time spent fulfilling a military-service obligation will not be counted toward this seven-year limit.

Nursing

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The Bachelor of Science with a Major in Nursing Program is accredited by the National League for Nursing Accreditation Commission (NLNAC), 61 Broadway 33rd Floor, New York, NY 10006, telephone 1-800-669-1656; and the Indiana State Board of Nursing Health Professions Bureau.

As graduates of a pre-licensure nursing program, students will have attained the knowledge and skills needed to provide quality healthcare and the academic credentials required to take the National Council Licensure Examination (NCLEX-RN). Upon successful completion of this examination, the student will be eligible to practice as a registered nurse. The baccalaureate degree graduate is prepared at the professional level to function in a leadership role with other team members in varied and complex healthcare settings.

The RN-B.S. curriculum is uniquely designed for associate degree or diploma registered nurses, working full or part time, who wish to step up to bachelor's degree. It is designed to meet the student's professional goals in a flexible

environment. Included in the program are two clinical practicums in a variety of acute, longterm, and community settings. Advising is personalized.

Students are responsible for current nursing policies found online at www.ipfw.edu/nursing/handbooks/default.shtml.

Prenursing

Admission to the nursing program from prenursing is limited and competitive. Prenursing applicants must meet the following requirements:

- Be admitted to IPFW as a degree-seeking student (Part 8)
- Complete 16 hours of prenursing curriculum with a grade of C or better in each course. Courses may be repeated only one time. The prenursing curriculum includes:

PSY 120

ENG W131

CHM 104 or CHM 111

BIOL 203

COM 114

- Students must have completed courses in biology and pharmacology within five years of application.
- Students must have completed courses in chemistry and nutrition within 10 years of application.
- Have a minimum IPFW grade-point average (GPA) of 2.5 on a 4.0 scale in the prenursing curriculum. The GPA is calculated on only the 16 hours of prenursing curriculum taken at IPFW or at other Purdue University or Indiana University campuses. Applicants are ranked based on this GPA. This GPA does not include transfer courses.
- A minimum GPA does not guarantee admission. The actual GPA necessary for admission varies with the GPA distribution of the applicant pool and the number of available seats for admission.
- Applicants are required to take a preadmission examination. The examination is administered on specific dates and times. Applicants pay a testing fee.
- All transfer grades will be reviewed and evaluated in the admission process.
- First-priority consideration for program admission will be given to students who have completed 9 or more of the 16 prenursing curriculum hours at IPFW or at other Purdue University or Indiana University campuses. Three credit hours of a required science must be taken at a Purdue University or Indiana University campus for admission consideration.
- If additional seats are available, the second priority is given to students who have completed less than 9 of the 16 prenursing curriculum hours at IPFW or at other Purdue University or Indiana University campuses. Three credit hours of required science must be taken at a Purdue University or Indiana University campus for admission consideration.
- If additional seats are available, the third priority is given to students who have none of the 16 prenursing curriculum hours at IPFW or at other Purdue University or Indiana University campuses. In this case, the transfer GPA of the prenursing curriculum will be used for admission.
- Should a tie in applicants' GPAs occur, rank ordering will be based upon the number of repeated courses at IPFW, grades earned in science courses at IPFW, and scores earned on the preadmission examination.
- Students apply to enter the B.S. degree program.
- Students are admitted for a specific semester and are expected to enter that semester. Students who do not enter that semester must reapply for competitive program admission. Students who decline admission two times will no longer be considered.
- Students must apply by the following deadlines: May 1 (fall semester) or Dec. 1 (spring semester).
- LPN admission is conducted once per year with a Dec. 1 (spring semester) application deadline.
- Student must accept or decline admission by returning the IPFW program admission form by the defined deadline.

- Students who have not been accepted, but who are qualified, may reapply for admission.
- Credits in developmental courses (ENG R150, R151, R152, P131, W130, or MA 109) do not apply toward either the prenursing or nursing curriculum.

All Current nursing policies are online at: www.ipfw.edu/nursing/handbooks/default.shtml.

Transfer Students from Other Nursing Programs

Transfer students from other NLNAC or CCNE accredited RN nursing programs may be considered for admission based on availability of space. Students must have completed 24 credit hours with a GPA of 3.5 (4.0 scale) or higher.

- Applicants are required to take a preadmission examination. The examination is administered on specific dates and times. Applicants pay a testing fee.

Criteria for Dismissal from Prenursing/ Ineligibility for Admission to Nursing

- A student who earns two grades below C in the same or any combination of two courses required in the prenursing curriculum will be ineligible for program admission for a period of five years after earning the last grade below C.
- A student who is dismissed may appeal the decision to the Department of Nursing. If the student is dismissed for failure to meet the university's minimum academic standards, application for readmission must follow the procedures established by the university. The Department of Nursing recognizes the Academic Renewal option.
- Dismissal from the nursing program may result from professional misconduct: Professional Misconduct Policy, www.ipfw.edu/nursing/hanbooks/default.shtml.

Criteria for Dismissal from Nursing

- A student who earns two grades below C in the same or any combination of two courses required in the nursing curriculum will be dismissed from the program.
- A student who has been dismissed from the nursing program is ineligible for admission into the nursing program for a period of five years from the date of dismissal.
- Dismissal from the nursing program may result from professional misconduct: Professional Misconduct Policy, www.ipfw.edu/nursing/handbooks/default.shtml.
- A student who is dismissed may appeal the decision to the Department of Nursing. If the student is dismissed for failure to meet the university's minimum academic standards, application for readmission must follow the procedures established by the university. The Department of Nursing recognizes the Academic Renewal option.

Special Academic Regulations for Students in Nursing

Physicals, Immunizations, TB, CPR, and Drug Screen

- Policy is available online at: www.ipfw.edu/nursing/handbooks/default.shtml.

Degree Requirements

- Students are expected to complete the B.S. within six years after admission to the program.

- Students are required to complete the degree under the requirements specified in the *Bulletin*, Requirements for Degrees (Part 8), and College of Health and Human Services (see Part 4), in effect at the time of admission to nursing.

Validating Previous Knowledge and Experience

- Previously acquired knowledge/experience may be validated by challenge examination(s). Contact a nursing or prenursing advisor for specific information and department guidelines.
- In all cases, eligibility for a challenge examination; the type of examination; testing procedures, date, time, and location; and evaluation of the performance will be determined by the IPFW Department of Nursing faculty. Decisions made by the department faculty with respect to the above are final. Only one attempt at an authorized challenge examination may be made.
- RN–B.S. students who are certified by a recognized nursing organization may seek credit towards a nursing elective. Certain certificates may be used as credit for required nursing courses.

Academic Advising

Opportunities to talk to nursing faculty are available during office hours, via e-mail, or by appointment. Advising is personalized. [Make an appointment](#) to have your transcripts and nursing experience evaluated.

Participation

Nursing students have the opportunity to impact decisions within nursing and on the campus by committee participation. Committee openings are announced in classes and posted on the nursing Web site. The Undergraduate Curriculum Committee is an example of one committee that invites and names a student representative and an alternate.

Eligibility for Licensure

Upon successful completion of the B.S. program, the graduate is eligible for licensure as a registered nurse (RN). Any person who applies for examination and registration as a registered nurse in Indiana shall submit to the Health Professions Bureau of the Indiana State Board of Nurses written evidence, verified by oath, that he/she

- has completed an approved high school course of study or equivalent as approved by the appropriate educational agency
- has completed the prescribed curriculum in a state-accredited school of nursing and holds a diploma or certificate from there
- has not been convicted of any act that would constitute grounds for disciplinary sanction under the state board rules and regulations or of any felony that has direct bearing on the individual's ability to practice competently.

Organizational Leadership and Supervision

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols/

The mission of the Division of Organizational Leadership and Supervision (OLS) is to integrate theory and practical application in developing leaders for roles in the dynamic organizational environment of the 21st century. This goal is accomplished through an interdisciplinary curriculum that emphasizes an understanding of people, groups, and the global community within an organizational framework.

OLS combines the study of leadership with a career concentration. The program focuses on understanding and working with people within organizations and the practical application of leadership concepts and theories. Students' creativity and competence in the administration of human resource systems, team design and facilitation, and the influencing processes that define leadership are developed through this program.

The division offers the following academic programs, which are described in Part 5 of this *Bulletin*.

Subject

Organizational Leadership and Supervision
Supervisory Leadership

Program

A.S., B.S., and Minor
Certificate

Philosophy

Department of Philosophy
College of Arts and Sciences

Classroom Medical 23 ~ 260-481-6366 ~ www.ipfw.edu/phil

Physics

Department of Physics
College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

Political Science

Department of Political Science
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

Political science includes basic issues in governance; political structures, processes, and controls; social conditions; and intergovernmental relations. This program helps you prepare to be an informed citizen or public servant; to succeed in a wide variety of careers; or to engage in further study of government, politics, or law.

The Department of Political Science offers a Bachelor of Arts, an Associate of Arts with a concentration in political science, a minor, Teacher Certification, and a Certificate in Civic Education and Public Advocacy (see Program Descriptions). The department also offers specialized advising for prelaw students.

Prelaw Program and Advising

Advising for prelaw students is provided by faculty in the political science department. Although no specific major is usually required for admission to law school, prelaw students can benefit greatly from the experience and analytical skills gained from the study of political science.

Psychology

Department of Psychology College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The Department of Psychology offers a bachelor's degree in psychology. A minor in psychology is also offered for students in other bachelor's degree majors. Many courses are offered in the evenings, and students may attend full or part time.

An Associate of Arts with a concentration in psychology is described in the College of Arts and Sciences section of Part 5 .

Honors Program in Psychology

A student may earn an honors degree in psychology by completing all of the requirements toward the B.A., achieving an overall GPA of 3.50 or higher, and conducting a two-semester independent research project. In the first semester of independent research the student is to complete three credits of PSY 498 or PSY 590. In the second semester, the student is to complete an honors thesis, PSY 499. As part of the honors thesis, an oral presentation to the department is required.

Sociology

Department of Sociology College of Arts and Sciences

Classroom-Medical Building 241 ~ 260-481-6842 ~ www.ipfw.edu/sociology

Courses in sociology provide an understanding of society and of the relationship between the individual and society. Studies in sociology help to prepare you for graduate school and careers in the social services, law, human relations, criminal justice, government, education, and mass media. In order to effectively plan a course of study that will best meet your educational and career objectives, you will be assigned to an advisor as soon as you declare a major in sociology.

Although a minor is not required, study in an outside area is recommended. Anthropology, computer science, economics, history, labor studies, political science, psychology, organizational leadership and supervision, and women's studies support the major well.

Theatre

Department of Theatre College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

Degree programs offered by the Department of Theatre provide comprehensive training for the theatre profession and explore theatre's 2,000-year history and literature. Through its programs, the department seeks to provide the finest in undergraduate education by providing a professional curriculum that embodies defined objectives and comprehensive performance/production training. Students study both content (dramatic literature, theory and criticism, and theatre history) and process (acting, directing, designing, and production).

The department offers a Bachelor of Arts in theatre. Emphases are available in acting, design/technology and directing.

Minors in theatre and dance are available to students who are interested in theatre, but are pursuing IPFW bachelor's degrees in other subjects. Theatre Teaching certification is available through the School of Education.

Special Academic Regulations

Probation

You must earn a grade of C or better in each required theatre course and maintain a GPA of 2.5 or higher over all theatre courses you have completed. You are placed on academic probation if you do not meet this requirement.

Dismissal and Readmission

If you are on probation and do not correct academic deficiencies during your next semester of enrollment, you will be dismissed from the theatre program.

If you are dismissed from the theatre program, you may seek readmission under the university guidelines specified in Part 8 of this *Bulletin*.

Time Limit

You must complete the degree requirements specified in the *Bulletin* in effect at the time you were regularly admitted to the university. However, to ensure that you will be professionally competitive with other members of your graduating class, you may be required to satisfy the degree requirements specified in the most current *Bulletin* if you have not completed all requirements for your degree within seven years from the date of your admission.

Degree Requirements

You may not use a single course to fulfill more than one Department of Theatre requirement.

Department Handbook

Detailed information regarding requirements, policies, and practices of the department is included in a theatre student handbook available in the department office. All theatre majors must comply with the requirements specified in the handbook.

Visual Communication and Design

Department of Visual Communication and Design College of Visual and Performing Arts

Visual Arts Building 213 ~ 260-481-6709 ~ www.ipfw.edu/vpa/vcd

The mission of the Department of Visual Communication and Design is to educate its students and the community in art, design, and appropriate technologies. Students may pursue the Bachelor of Fine Arts with concentrations in computer art, graphic design, and photography. A two-year program of study, an Associate of Science in commercial art, is also offered.

Both the B.F.A. and A.S. programs include general education, art/design history, and visual communication and design courses.

Special Academic Regulations

To ensure that degree-seeking students are guaranteed priority registration in their classes, the following policies will be observed:

- Students who are not progressing toward completion of degree requirements, including students who have graduated but wish to continue a program of study, will be reclassified as nondegree-seeking. These students' registrations will not be processed until the final week before the beginning of each semester. This policy will allow these students an opportunity to avail themselves of classroom opportunities when space is available.
- All 400-level studio courses may be repeated up to a maximum of 18 credits. This long-standing policy is based upon the rationale that six semesters of study at that level in one discipline is sufficient for undergraduate training.
- Independent-study courses are available for students with at least junior standing to pursue studio interests not served in other course offerings. Independent-study courses may be arranged with the appropriate faculty member on the basis of a viable course of study, a reasonable load for the instructor, and space availability. Priority will be given to degree-seeking students and to classes with regularly scheduled meetings.
- Prerequisites for 200-level and above studio courses may be waived by the appropriate instructor during the week before classes begin, contingent upon space availability.
- Internships are available for students with at least junior standing to pursue learning opportunities in professional situations. Students may receive up to 6 credit hours for such experiential learning. Documentation concerning internship requirements can be found in the Department of Visual Communication and Design office.

Credit Transfer

If a student transfers studio credits from another college or university, he/she may be admitted to the B.F.A. program upon successful portfolio presentation. To earn the B.F.A. at IPFW, the student must fulfill all remaining requirements and complete a minimum of 24 credits of upper-division studio work at IPFW.

Time Limit

If a student does not complete degree requirements within seven years of matriculation, he/she may be required to meet the degree requirements specified in the current Bulletin.

Student Handbook

A departmental student handbook, consisting of policies and regulations of the Department of Visual Communication and Design, has been prepared as a guide for students. This handbook, available in the department office, provides detailed information about responsibilities and a sample curriculum for each degree. All VCD majors are expected to be familiar with the contents of this handbook.

Women's Studies

Department of Women's Studies College of Arts and Sciences

Classroom Medical Building 272 ~ 260-481-6711 ~ www.ipfw.edu/wost

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

In addition to the B.A. program, an Associate of Arts with a concentration in women's studies is available at IPFW. See College of Arts and Sciences in Part 5 for further information.

Academic Programs

Area (General Education) Requirements

Area I: Linguistic and Numerical Foundations

Reading/Writing (3 credits)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Listening/Speaking (3 credits)

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning (3 credits)

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 149 - Basic and College Algebra

A one-semester version of 113 and 153. Only 3 credits may be counted toward graduation in Arts and Sciences, Business and Management Sciences, or Public and Environmental Affairs.

Preparation for Course

P: MA 109 with a grade of B- or better, or placement by departmental exam.

Cr. 5.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II: Natural and Physical Sciences

Course List:

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

AST L100 - Solar System Laboratory

Study of planetary motions, orbits, shape of planets. Study of moon and Earth's gravity. Some of the laboratories may be held off campus. For Arts and Sciences students, A100-L100 may count as one course.

Preparation for Course

C: AST A100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, summer)

Notes

Laboratory studies to accompany A100.

(1 credit)

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems. Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

(1 credit)

IDIS G102 - Freshman Seminar/Physical and Natural World

Introduction to scientific study of the physical and natural world. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area II. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 115 - Introduction to Lasers

Two-hour lecture and two-hour laboratory class about the theory and operation of lasers. Lectures will discuss basic optics; the operation of lasers; laser safety; and the uses of lasers in science, industry, construction, communication, entertainment, and medical fields. Laboratory will reinforce classroom discussions. Class intended for nonphysics majors.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 120 - Physics of Sports

This course enables students to learn fundamental physical principles and concepts from examples of situations occurring in sports. The numerous recent applications of physics toward enhancing sports performance, both by improving techniques and equipment, will be selectively studied. Physical concepts such as velocity and acceleration, force, momentum, impulse, rotational motion, torque, pressure, fluid flow, energy, and power will be introduced and exemplified through sports. The course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 127 - Physics for Computer Graphics and Animation

A study of the physics of light and its interactions with objects as these topics apply to the production of computer-generated images. The course will investigate light and color through observation and the use of 3-D graphics programs. In particular how light interacts with surfaces and how we see will be explored in order to understand how to make graphic images that appear true to life.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 135 - The First Three Minutes

This course is a descriptive introduction to the major concepts of contemporary physics and their relationship to theories of the origin of the universe. The course presents a historical survey of cosmological thought, leading to today's recent developments. Topics include stars and galaxies, the four forces, relativity, quantum physics, elementary particles, and the Big Bang. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 136 - Chaos and Fractals

This course explores novel ideas in geometry and dynamical systems as they appear in natural phenomena. Irregular patterns in nature can be understood in terms of a fractal geometry. Physical processes that appear to be random actually obey a deterministic law. The concepts of chaos and fractals help us to understand these processes. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III: The Individual, Culture, and Society

Course List:

AFRO A210 - The Black Woman in America

A historical overview of the black woman's role in American society, including family, social, and political relationships.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

CDFS 255 - Introduction to Couple and Family Relationships

Provides further understanding of family relations for those unmarried, for those contemplating marriage, for those married, and for prospective marriage counselors. A functional approach to the interpersonal relationships of courtship, marriage, and family.

Cr. 3.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

HIST S105 - American History Honors To 1877

Equivalent of HIST H105 for honors students. Colonial period to 1877.

Preparation for Course

P: consent of instructor.

Cr. 3.

HSRV 350 - Drugs and Society

Emphasizes the social, psychological, biological, and cultural contexts in which addiction develops and occurs. Encourages an understanding of substance use, abuse, and addictive behaviors within a larger pattern. For this reason, the course is applicable to anyone who will be in a position in which they must a) work with people on a daily basis, b) provide supervision or support services within an organization, or c) work in any aspect of the helping professions.

Cr. 3.

IDIS G103 - Freshman Seminar/The Individual, Culture, and Society

Introduction to study of the nature and diversity of individuals, cultures, and societies. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area III. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

POLS S103 - Introduction to American Politics - Honors

Equivalent of Y103 for honors students.

Cr. 3.

POLS S211 - Introduction to Law - Honors

Equivalent of Y211 for honors students.

Cr. 3.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y211 - Introduction to Law

An introduction to law as a method for dealing with social problems and as an aspect of the social and political system. An introduction to legal reasoning, procedures, and materials. Will usually include comparison of United States and other societies and their approaches to law.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120H - Elementary Psychology - Honors

Honors equivalent of PSY 120. Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 335 - Stereotyping and Prejudice

This course examines the topics of stereotyping, prejudice, and discrimination from a social psychological perspective. Relying on empirical findings and relevant theoretical approaches, the course moves beyond lay opinions to explore the social psychological foundations and forms of stereotyping and prejudice, and to examine various strategies for reducing intergroup biases.

Cr. 3.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA H120 - Contemporary Health Issues

An examination of current public health, environmental health, and health service delivery issues in the United States. Topics include the organization and costs of health systems, access to care, and the interrelationships between risk factors and health; also environmental challenges facing our society and their impact on health.

Cr. 1-3.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

Area IV: Humanistic Thought

Course List:

CLAS C205 - Classical Mythology

An introduction to Greek and Roman myths, legends, and tales, especially those that have an important place in the Western cultural tradition.

Preparation for Course

P: ENG 131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

CMLT C217 - Detective and Mystery Literature

Origins, evolution, conventions, criticism, and theory of the detective and mystery story; history of the Gothic novel; later development of the tale of terror; major works of this type in Western fiction, drama, and film.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L108 - Introduction to Contemporary Literature

Significant fiction and drama of the past 20 years. The course may emphasize traditional writers such as Updike and Solzhenitsyn, or experimentalists such as Robbe-Grillet and Brecht.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L150 - Representative American Writers

Great American books by such writers as Hawthorne, Melville, Mark Twain, Cather, Faulkner, and Wright. Books might include *The Scarlet Letter*, *Billy Budd*, *Huckleberry Finn*, *My Antonia*, *The Sound and the Fury*, and *Native Son*.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L301 - Critical and Historical Survey of English Literature I

Representative selections with emphasis on major writers from the beginnings to Swift and Pope.

Preparation for Course

P: ENG L202, or W233 or equivalent.

Cr. 3.

ENG L302 - Critical and Historical Survey of English Literature II

Representative selections with emphasis on major writers from the rise of romanticism to the present.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

FINA A170 - Women Artists/The Visual Arts

Study of major areas of visual arts in which women have played a substantial part as artists. Major emphasis on women as artists in relationship to the major movements of the time.

Cr. 3.

FINA H101 - Art Appreciation

Objectives: to acquaint students with outstanding works of art and to provide an approach to appreciation through knowledge of purposes, techniques, form, and content. No credit toward a fine arts degree.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H401 - Art Theory IV

An introduction to the three branches of art theory: showing ways in which it has conditioned our concept and expectations of art, how art theory is used in the service of other disciplines, and how it can be used to illuminate events enacted within the actual work of art.

Cr. 3.

Hours

Class 3,

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F254 - Social History of Rock and Roll

A survey of rock and roll music as a uniquely American art form, traced from its roots in Anglo- American folk and country music and African American gospel and blues through its sundry subsequent phases, each viewed within its

defining aesthetic, sociocultural, historical, political, and technoeconomic contexts.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Because of significant overlapping content, students may count either FOLK F254 or MUS Z201 toward the Area IV requirement, but not both.

FREN F310 - Topics in French Literature in Translation

Readings in English translation novels, plays, essays, and poetry or other works that reflect a specific topic chosen by the instructor.

Cr. 3.

Notes

No credit in French.

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HON H101 - Ideas and Human Experience

A discussion class with limited enrollment and an interdisciplinary foundation. Topics vary and are usually focused on personal growth and exploration. Students are encouraged to think for themselves and look in unusual places to find the answers to life's tough questions. May be repeated for credit.

Cr. 1-3.

Notes

Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

IDIS G104 - Freshman Seminar/ Humanistic Thought

Introduction to major questions, traditions, and tools of humanistic inquiry. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area IV. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

ILCS I208 - International Cinema

In this course students will study international cinema in order to increase their critical thinking, analytical, and communicative ability through reading and writing about films made outside of the United States. It will focus on the international filmmakers that work consciously to express their own sense of national identity.

Cr. 3.

-with topic "Contemporary Problems and Issues"; formerly INTL I208

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

INTR 320 - Architecture and Urban Form in the Modern World

A survey of architectural and engineering developments of the 20th century.

Preparation for Course

P: ARET 210 or INTR 220.

Cr. 3.

INTR 330 - Culture and Design: A Cross-Culture Comparison of Architecture

Architecture and the built-environment reflect political, economic, social, and cultural aspects of a society. Cross-cultural comparisons of architectural design philosophy are explored through the study of design principles such as space and order, form and color, architecture semiotics and building components. The comparison is between Western and Eastern architecture with the same type of building. The interrelationship of architecture and culture is examined through design theories and philosophy by the expression of architecture digital photos and videotapes. Papers, presentation, group studies and non-written projects are required.

Preparation for Course

P: COM 114 or ENG W131.

Cr. 3

MUS N101 - Music for the Listener - Honors

Survey course designed to introduce nonmusic major to materials, history, and literature of Western art music from the earliest times to present. Emphasis upon developing listening skills and an awareness of different musical styles through study of major works of outstanding composers of each historical period.

Cr. 3.

MUS Z101 - Music for the Listener

Introduction to the elements of music through the mode of listening and a historical survey of the way those elements have been used in various types of musical compositions. For non-music majors.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

MUS Z201 - History of Rock and Roll Music

A survey of the major trends, styles, and genres of rock music from the earliest recordings to the present day, focusing on the work of the artists and groups who have proven to be of the most enduring significance. Credit given for nonmusic majors only.

Cr. 3.

Because of significant overlapping content, students may count either FOLK F254 or MUS Z201 toward the Area IV requirement, but not both.

MUS Z393 - History of Jazz

A survey of periods, major performers and composers, trends, influences, stylistic features, and related materials in the history of jazz music.

Cr. 3.

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 112 - Religion and Culture

A study of traditional patterns of encounter with the sacred. Topics considered will typically include the secularization of Western culture and religious elements in contemporary American culture.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PHIL 351 - Philosophy of Science

This course examines topics at the intersection of science and philosophy. Primary topics: fundamental principles of the scientific method; the nature of scientific change; the epistemology of science and the debate over scientific realism; scientific convergence and the future of science; consilience of science with nonscience; science and pseudoscience; science and human values. Secondary topics: the strange world of contemporary physics; ethical issues in scientific research; science and religion; science and education; science and the meaning of life.

Cr. 3.

REL 112 - Religion and Culture

An introduction to modern academic theories regarding the origin, form, and function of religion in human life supported by case studies drawn from various world religious traditions. Credit not given for both REL 112 and PHIL 112.

Cr. 3.

REL 301 - Islam

Introduction to the "religious world" of Islam: the Arabian milieu before Muhammad's prophetic call, the career of the Prophet. Qur'an and hadith, ritual and the "pillars" of Muslim praxis, legal and theological traditions; mysticism and devotional piety, reform and revivalist movements.

Cr. 3

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V: Creative and Artistic Expression

Course List:

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W203 - Creative Writing

Focus in either poetry or fiction writing. Exploration in imaginative writing with focus on one specific genre. May be repeated once for credit with a different topic.

Preparation for Course

P: W131 or equivalent.

Cr. 3.

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

FINA N108 - Introduction to Drawing for Nonmajors

Introduces the student to the basic elements of drawing. Line, shape, value, and perspectives will be studied before moving on to the more complex use of color. Landscape and still life will be the source of subject matter for the semester.

Cr. 3.

Hours

Class 3, Studio 3,

FINA S105 - Introduction to Design

Introduction to Design for nonmajors introduces students to the basic elements of design. Line, shape, space, focus, and color are the elements covered in class. Formal and informal systems of design will be explained in classroom exercises.

Cr. 3.

Hours

Class 3, Studio 3,

FINA S165 - Ceramics for Nonmajors

Introduction to ceramics is a creative art course in which students use handbuilding techniques to create tile, pottery form, and ceramic sculpture. Various lowfire surfaces and firing atmospheres will be explored. Slide lectures will accompany projects, exposing students to the work of various cultures and ceramic artists. Classroom projects and discussions will promote a greater understanding of form and creative processes.

Cr. 3.

Hours

Class 3, Lab. 3,

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

MUS Z140 - Introduction to Musical Expression

Introduction to the fundamentals of music and their appreciation in the process of writing and performing music. Students will learn to read musical notation and develop skills in playing folk guitar as an accompaniment instrument. Students must provide their own guitar.

Cr. 3.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

VCD N274 - Digital Imaging

A course designed for non-art majors. Students will learn to apply basic art and design fundamentals to the personal computer. Areas such as page layout and illustration will be covered in assigned problems.

Cr. 3.

Hours

Class 3, Studio 3,

VCD S105 - Introduction to Design

Cr. 3.

Area VI: Inquiry and Analysis

All inquiry and analysis courses have a prerequisite of "Completion of foundation skills requirement." Some courses may also have specific prerequisites. Inquiry and Analysis courses are not open to students with freshman status.

Course List:

- HIST H373 - History of Science and Technology I

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

BIOL 304 - Major Ideas in Biology (Honors Course)

Major ideas in biology such as immunization, spontaneous generation, inheritance, evolution, genetic engineering, and ecology will be examined. Students will analyze the methodology and results that lead to understanding these ideas. Small-group discussion, oral presentations, and written papers will be used to study the impact of these ideas on other areas such as economics, politics, or religion. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: an introductory course in biology.

Cr. 3.

BIOL 317 - Addictions: Biology, Psychology, and Society

It is an interdisciplinary, introductory course taught by a team from the biology and psychology departments. The course will focus on using the processes of addiction to alcohol, marijuana, nicotine, and psychomotor stimulants to teach the basics of biological and psychological sciences. Example topic areas include neurological/ brain function, impact on cognitive function, biochemistry, genetics, immunology, emotion and motivation, learning and memory, physiology and pharmacology, and the psychosocial aspects of addictions. Cannot be used as A or B elective for biology majors.

Preparation for Course

P: Placement at or above ENG W131.

Cr. 3.

BIOL 326 - Heredity: A Human Perspective (Honors Course)

Advances in genetics will be examined using diverse topics such as cloning and alteration of human genes and/or embryos, genetic screening, and genetic manipulation of other organisms. Students will gain understanding of basic methods utilized by geneticists and learn to critically analyze published data. Reading the discussions related to ethical, social, political, and economic issues will help assess the impact of current developments in genetics. Research on a selected topic leading to an oral presentation and a term paper will provide opportunities for synthesis. Some hands-on laboratory experience will also be an integral part of this course. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: 100, junior standing, and completion of General Education Area I or instructor's permission.

Cr. 3.

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CMLT C333 - Romanticism

The rise of Romantic tendencies in 18th-century Europe (pre-Romanticism); the Romantic revolution in early 19th-century Western literature. Such authors as Goethe, Chateaubriand, Wordsworth, Byron, Novalis, Hoffman, Hugo, Poe.

Preparation for Course

P: ENG L202 or W233 or equivalent; R: CLAS C205.

Cr. 3.

Variable Title

(V.T.)

CMLT C337 - The 20th Century: Tradition and Change

The search for forms and language to express new understanding of art and reality in the era of modernism.

Preparation for Course

P: ENG L202 or W233 or equivalent; R: CLAS C205 or 3 credit hours of literature..

Cr. 3.

Variable Title

(V.T.)

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

CS 306 - Computers in Society

Case study analysis of the social impacts of computerization and networking. Topics include computer ethics, crime, privacy, security, reliability, and vulnerability. Other topics include cyberphilia, cyberphobia, censorship, depersonalization, disenfranchisement, automated decision making, artificial intelligence, cognitive science, and ergonomics. Students present projects applying these issues to today's environment.

Preparation for Course

C: junior class standing.

Cr. 3.

ECON E306 - Undergraduate Seminar in Economics

Discussion and analysis of contemporary economic problems and policies. Different topics may be offered each semester. May be repeated twice for credit if topics differ. Papers and other written and oral assignments required.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

with topic "Contemporary Problems and Issues"

ECON E340 - Introduction to Labor Economics

Examines theories of wage and employment determination. Analysis of the impact of unions and other institutional factors on these theories; labor market imperfections; labor mobility; impact of government policies on labor behavior.

Preparation for Course

P: ECON E201; introductory statistics; junior class standing.

Cr. 3.

ECON E346 - Economics of Gender

This course examines the pattern of employment, unemployment, earnings, occupations, and income categories of gender, race-ethnicity, and class as a conceptual framework to understand the emerging patterns of economic well-being. The theoretical explanations offered by neoclassical economics as well as political economy will be explored to understand work, wages, and discrimination. The course emphasis is on contemporary American society.

Preparation for Course

P: ECON E200 or E201 or approval of instructor.

Cr. 3.

EDUC E346 - Discipline/Parenting for Young Children

A study of discipline of children in early childhood settings for interaction in teaching and learning environments with an emphasis on working with parents and teachers.

Cr. 3.

EDUC K410 - Trends and Issues in Special Education

Provides students with an overview of current movement in the field of special education. Major emphasis is on application and implication of principles mandated by P.L. 94-142 and Section 504 of the Rehabilitation Act of 1973.

Preparation for Course

P: K205 or K206 or permission of instructor.

Cr. 3.

ENG L399 - Junior Seminar

Small seminar on various topics, encouraging independent thinking and research methods. May be repeated with a different topic for a maximum of 6 credit hours.

Preparation for Course

P: ENG L202.

Cr. 3.

Variable Title

(V.T.)

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

FILM K390 - The Film and Society

Film and politics; censorship; social influences of the cinema; rise of the film industry. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

R: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-4.

Variable Title

(V.T.)

FOLK F305 - Asian Folklore

Forms and functions of folklore, folklife, or folk music in the traditional and developing societies of Asia. Folklore as a reflection of culture. Relationship between folklore forms and belief systems in Asia. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G305 - Geologic Fundamentals in Earth Science

Introductory course for advanced students. Earth materials, earth processes, geological principles. Emphasis on relationships between geology and other physical sciences.

Cr. 3-5.

Hours

Class 2-3, Lab. 0-3,

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

HIST A313 - Origins of Modern America

Reconstruction, industrialism, immigration, urbanism, culture, foreign policy, progressivism, World War I.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST D426 - History of Balkans: 1914 to Present

First World War in the Balkans; politics, economies, and societies in the Balkan countries during the 20th century; Balkan unity movements; international events and World War II; rise of socialism in the region; era of cold war and detente; revolutions of '80s and '90s.

Cr. 3.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HON H300 - Interdepartmental Colloquium

Honors seminar focusing on issues in the humanities from an interdisciplinary perspective.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

HON H302 - Interdepartmental Colloquium

Honors seminar focusing on topics in the natural and mathematical sciences areas from an interdisciplinary perspective.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the science and mathematics requirement. Questions about the Honors Program or specific honors courses may be directed to the Honors Program director or to the department sponsoring the course. To register in an honors course, students must have Honors Program eligibility or instructor's permission.

LING L303 - Introduction to Linguistic Analysis

Introduction to basic concepts of linguistic analysis, exemplifying the general principles of structural approaches to the study of language. Application of analytical methods to problems in phonology, syntax, and semantics.

Preparation for Course

P: L103.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

MUS L418 - Psychology of Music

Introduction to the physical, psychological, and physiological aspects of sound and music. Survey of the theories related to sound production, acoustics, music perception and learning, and the effects of sound and music on the behavior of humans. Overview of music psychology research, and the scientific method and research techniques.

Preparation for Course

P: junior standing or permission of instructor.

Cr. 3.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 496 - Leading Change: Theory and Practice

This course is designed to assist students in integrating leadership theories and modeling change initiatives. A final synthesis project is required.

Preparation for Course

P: OLS 252 and senior class standing.

Cr. 3.

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

PHYS 302 - Puzzles, Strategy Games, and Problem Solving in the Physical Sciences

This course will explore scientific problem solving by comparing and contrasting it with problem solving in two other domains: puzzles and strategy developing representations, defining the problem, using heuristics, and evaluation solutions. Strategy games will be used as a way to practice problem-solving skills in a domain that can be quickly learned. No credit toward a physics major.

Preparation for Course

P: successful completion of General Education Areas I and II.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 326 - Motion, Biomechanics and Animation

The course will focus on Newtonian physics of motion and ultimately its application in biomechanics and how an understanding of physics applies to 3-D computer animations. In particular, motion will be explored to understand how to make animations that look and feel correct. Topics to be covered include Newton's three laws of motion, conservation of energy and momentum, and rotational dynamics. The course will investigate these phenomena through observation, experimentation, the use of 3-D graphics programs, and simulations.

Preparation for Course

P: successful completion of General Education Areas I and II or instructor permission.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

POLS S401 - Studies in Political Science

Equivalent of Y401 for honors students.

Cr. 3.

Variable Title

(V.T.)

POLS Y306 - State Politics in the United States

Comparative study of politics in the American states. Special emphasis on the impact of political culture, party systems, legislatures, and bureaucracies upon public policies.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y307 - Indiana State Government and Politics

Constitutional foundations, political development, organizational and functional process and growth, and current problems of Indiana government as a focal point for understanding role of states as instruments of social policy. Readings, case studies, problems.

Cr. 3.

POLS Y335 - Western European Politics

Development, structure, and functioning of political systems in Western Europe. Political dynamics of European integration.

Cr. 3.

POLS Y339 - Middle Eastern Politics

Political culture and change in selected Middle Eastern and North African countries. Topics include political elites, traditional cultures, modern political ideology, institutions of political control, conflict management, and social reform policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y340 - East European Politics

Compares political change in the East European states, and emphasizes the legacies of authoritarianism and communism and the post-communist transition to democracy. Topics include the building of political institutions, the inclusion of citizens into the polity, the reform of the economy, the management of ethnic and social conflicts, and integration into the European Union. Eligible for graduate credit.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) Requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y350 - Politics of the European Union

Study of the politics of the European Union (EU). Assesses past and present dynamics of economic and political integration in Europe, the structure and work of European Union institutions, and EU public policies such as the Single Market, the common currency, common foreign and security policy, and trade.

Cr. 3.

POLS Y360 - U.S. Foreign Policy

Mechanics of the foreign-policy-making process in the United States. Analysis of competing concepts of the national interest; isolationism, the Open Door, Monroe Doctrine, national security, containment, military and political alliances, the new nations; their relation to substantive policies and to the character of American democracy.

Cr. 3.

POLS Y376 - International Political Economy

Theories about the interaction between the international economic and political systems are the subject of this course. Specific topics covered will include (among others) the politics of trade, aid, foreign investment, and international monetary affairs; theories of dependency and imperialism; the politics of international competition in specific industries; the stability/instability of international economic regimes.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

POLS Y490 - Senior Seminar in Political Science

Open to senior majors and others with consent of instructor. Readings and discussion of selected problems; research paper ordinarily required. May be repeated once for credit with a different topic.

Preparation for Course

P: Y205 or consent of instructor.

Cr. 3.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

PSY 317 - Addictions: Biology, Psychology and Society

It is an interdisciplinary, introductory course taught by a team from the biology and psychology departments. The course will focus on using the processes of addiction to alcohol, marijuana, nicotine, and psychomotor stimulants to teach the basics of biological and psychological science. Example topic areas include neurological/brain function, biochemistry, genetics, immunology, emotion and motivation, learning and memory, physiology and pharmacology, and the psychosocial aspects of addictions.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 334 - Cross Cultural Psychology

Examination and restructuring of the major psychological principles from a cultural perspective. A study of the diversity of development of the individual across Asian, African American, Latino/a, and American Indian/Alaskan Native cultures will be presented. The experience of self, role of the family and community, and the psychology of prejudice will be emphasized. Issues related to the workplace, religion, sexual orientation, ability status, and gender will also be discussed. It will be assumed that the student already has some familiarity with major psychological theories and terminology.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

PSY 345 - Psychology of Women

Theories and current research on the psychological nature of women and their roles in society, including topics such as sex differences and similarities, sex-role socialization, sex-role stereotyping, female sexuality, achievement motivation, role conflict, mental-health issues, feminist therapy, rape, menstruation, pregnancy, childbirth, motherhood, and topics of related interest.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 353 - Social and Personality Development in Children

An examination of major theories and current research on the development of social behavior and personality in children. Parent-child and family relationships, peer relations, aggressive and prosocial behavior, gender typing, self-concepts, moral reasoning, social cognition, and other topics are considered.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 362 - Human Development II: Adolescence

A behavioristically oriented analysis of social, personality, and cognitive development in adolescence and youth.

Preparation for Course

P: Sophomore class standing and PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 365 - Development of Gender Roles in Children

Considers basic concepts and the varying theoretical interpretations for the development of gender roles with special attention given to recent empirical findings with children. Measures used in this area will be demonstrated in class and critically evaluated.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 371 - Death and Dying

A multidisciplinary, empirically-based consideration of emotions, behaviors, and cognitions related to death and the process of dying. Topics include cultural and historical differences in concepts of dying, grief, and bereavement; individual differences related to preparation, adjustment, and coping, as well as discussion of special topics (e.g., hospice care, physician-assisted suicide, media coverage of death and dying).

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 444 - Human Sexual Behavior

A survey of research in human sexuality with the primary focus at the social psychological level. Problems in sex research and theoretical issues will be considered.

Preparation for Course

P: Junior class standing and PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 460 - Advanced Abnormal Psychology

An advanced course in abnormal psychology allowing for more thorough coverage of selected disorders that were introduced in PSY 350. Topics covered will typically include the affective disorders, schizophrenia, anxiety and stress-related disorders, and personality disorders; but may vary somewhat with each offering of the course. Outside material related to description and diagnostic indicators of the disorders, latest research on etiology, and current treatment methods will be included.

Preparation for Course

P: PSY 350.

Cr. 3.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S314 - Social Aspects of Health and Medicine

Group characteristics in the causation, amelioration, and prevention of mental and physical illness, and the social influences in medical education, medical practice, and hospital administration.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S315 - Work and Occupations

Treats work roles within such organizations as factory, office, school, government, and welfare agencies; career and occupational mobility in work life; formal and informal organizations within work organizations; labor and management conflict and cooperation; problems of modern industrial workers.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S316 - The Family

Cross-cultural perspectives on family systems; structure and process of the conjugal family in modern and emerging societies. Focus on relationships of the family to other subsystems of the larger society and on interaction within the family in connection with these interrelationships. Emphasis on development of systematic theory.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S320 - Deviant Behavior and Social Control

Analysis of deviance in relation to formal and informal social processes. Emphasis on deviance and respectability as functions of social reactions, characteristics of rules, and power and conflict.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S325 - Criminology

A study of the patterns of crime, strategies for control, and theories of crime causation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S328 - Juvenile Delinquency

A study of the patterns of juvenile delinquency, strategies for control, and theories of juvenile delinquency causation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S360 - Topics in Social Policy

Specific topics to be announced, e.g., environmental affairs, urban problems, poverty, population problems. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

SPEA H422 - The Social Epidemics: AIDS, Violence, and Substance Abuse

This course examines HIV/AIDS, violence, and substance abuse in the context of racial, gender, sexual orientation, and class dynamics that may underlie the way these pathologies affect certain populations. Emphasized is the recognition that how we define disease and causation can influence how we attempt to find a cure.

Cr. 3.

SPEA V348 - Management Science

Introduction to management-science models and methods for policy analysis and public management. Methods include decision analysis, linear programming queuing analysis, and simulation. Computer-based applications are included. Prior familiarization with computers is recommended, though not required.

Preparation for Course

P: K300, MA 153 or MA 213.

Cr. 3.

SPEA V371 - Financing Public Affairs

A survey of economic and political theories of market failures, public expenditure evaluation, economic stabilization, systems of redistribution and fiscal federalism. Examples and applications to contemporary government decisions.

Preparation for Course

P: V170, ECON E201, E202.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

SPEA V450 - Contemporary Issues in Public Affairs (Honors Course)

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit under different topics.

Preparation for Course

P: honors eligibility or consent of instructor, and one or more of the following courses are recommended: HIST H105, HIST H106, SOC S161, POLS Y103, and/or SPEA V170.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Equivalent of SPEA V450 for honors students.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Associate

Architectural Engineering Technology (A.S.)

Program: A.S.

Department of Manufacturing & Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.

- Employing concepts of architectural theory and design in a design environment.
- Utilizing modern instruments, methods and techniques to produce A/E documents and presentations.
- Conducting standardized field and laboratory testing on construction materials.
- Utilizing modern instruments and research techniques for site development and building layout.
- Estimating material quantities for technical projects.
- Utilizing codes, contracts and specifications in design, construction and inspection activities.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employing productivity software to solve technical problems.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
 - Conduct, analyze, and interpret experiments than apply results.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - In-class projects requiring design decisions.
 - Student design projects for external presentation.
- An ability to function effectively on teams.
 - Actively participate in team activities during and outside class.
 - Orally and graphically present teams results.
- An ability to identify, analyze and solve technical problems.
 - Determine forces and stresses in elementary structural systems.
 - Calculate basic loads & demands in mechanical/electrical systems.
 - Solve problems in math, statistics, and physics courses.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
 - Demonstrate effective graphic communication skills
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Require library research and reporting.
 - Require Web research and reporting.
- An ability to understand professional, ethical and social responsibilities.
 - Demonstrate knowledge of professional code of ethics.
 - Service leaning component.
- A respect for diversity and knowledge of contemporary professional, societal and global issues.
 - Social studies elective.
 - Exposure to other cultures building practices.
- A commitment to quality, timeliness, and continuous improvement.
 - Quality and timeliness is required aspect of course.
 - Course evaluation performed each semester.

Mission

To provide employers and the public of northeast Indiana with educated, technologically equipped graduates, able to serve the varied construction industries (represented by architectural, civil, and construction engineering technologies, and interior design) in advancing the solutions to problems facing the public and private sector.

Goals

- To provide education of the traditional and returning adult student for career success in the construction industry

- To develop a respect for diversity and a knowledge of contemporary professional, societal, and global issues with an understanding of professional and ethical responsibilities.
- To be responsive to the ever-changing technologies of the construction industries.
- To instill in students the desire for and ability to engage in lifelong learning.

The breadth of the curriculum will provide leadership potential in addressing problems of the region, its people, and its industries.

This program helps you prepare for technical employment with architects, engineers, builders, materials suppliers, and related government agencies. You may work in drafting, architectural detailing, construction expediting, estimating, or sales. Graduates with experience hold jobs as senior drafting personnel, architectural job captains, construction supervisors, and contractors. This program also prepares you to work toward a bachelor's degree in construction engineering technology. The architectural engineering technology program is not a professional architecture program and will not lead to licensure as a registered architect.

The department offers related majors in civil engineering technology and construction engineering technology. All three programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone, 410-347-770. The programs provide problem solving skills, hands-on competency, and required state-of-the-art technical knowledge. Alumni of the department are employed in all areas of the building industry, including construction; architecture; interior design; civil engineering; land surveying; and state, county, and city governments.

To earn the A.S. with a major in architectural engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and those described below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 11

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

ETCS General Distribution Requirements Credits: 11

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Core and Concentration (Major) Courses Credits: 39

ARET 123 - Construction Graphic Communication

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

ARET 222 - Architectural Engineering Construction II

Preparation of graphic and written documents to construct an intermediate-sized commercial or institutional building. A model may be required. Computer applications.

Preparation for Course

P: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 281 - Environmental Equipment for Buildings I

A survey of basic environmental control parameters of heating, ventilating, air conditioning, plumbing, lighting, electricity, and their equipment (size and shapes) and the physiological effects on mankind. Emphasis placed on definitions, types of systems, and physical characteristics of equipment.

Preparation for Course

P: ARET 124, MA 153.

Cr. 3.

ARET 282 - Environmental Equipment for Buildings II

Continuation of ARET 281 with emphasis on calculation and basic design for heating, ventilating and air conditioning, plumbing, lighting, electrical, and other equipment with laboratory practice applying concepts and calculations to a term project. Term project is the development of mechanical, plumbing, lighting, and power plans for a light commercial building or residence. Computer application.

Preparation for Course

P: ARET 281.

Cr. 3.

Hours

Class 2, Lab. 2.

CET 104 - Elementary Surveying

Fundamental concepts and practical applications related to the measurement of vertical and horizontal distances and angles utilizing steel tapes, automatic levels and theodolites. Computations of grades, traverses, and area. Basic concepts of topography and its uses.

Preparation for Course

C: MA 154 or MA 159 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 266 - Materials Testing

Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.

Preparation for Course

P: STAT 301, C: CET 283.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

ET 190 - Statics

Introduction to fundamentals of applied mechanics, including equilibrium of structures under the influence of forces; trusses; frames; beams; friction; properties of areas; stress and strain in axial systems.

Preparation for Course

P: MA 159 or 154.

Cr. 3.

ET 200 - Strength of Materials

Principles of applied strength of materials, including shear and bending moment; shear and bending stresses; bearing, connections; column analysis; and deflection of beams.

Preparation for Course

P: ET 190.

Cr. 3.

INTR 121 - Freehand Sketching

Drawing in the "freehand" (nonmechanical) method will be presented in pencil, ink, and markers. The course is aimed at the beginning design student. It will utilize objects of interior environment as a means of understanding various drawing principles and familiarize the student with basic rendering techniques.

Cr. 3.

Total Credits: 67

Biology Concentration (A.A.)

Program: Concentration A.A.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply theories and principles to problem solving.
- Provide coursework and advising for students who seek employment after the A.A. degree or who expect to continue their undergraduate education with the intent of earning a B.S. degree in Biology.

The associate of arts degree requires courses that satisfy the IPFW general education program and requirements in the concentration. The degree requires a total of 63 credits, most of which are fulfilled by required courses. If you plan to continue for a bachelor's degree, see Part 5 for B.S. requirements in biology, biology teaching, and medical technology.

Requirements for the Associate of Arts

Credit Requirements for the IPFW General Education Program (Credits: 18)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 37-38
- Additional credits in approved elective courses Credits: 4-12

Total with a graduation GPA of at least 2.00 (60-63)

Concentration Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory;

stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Or

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

Two semester, 8 credit sequence in organic chemistry

One of the following Credits: 3-4

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

Or

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Business (A.S.B.)

Program: A.S.B.

SBMS Undergraduate Student Affairs Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

Upon completion of the Associate Degree in Business, students will be able to:

- Identify, define, describe and/or discuss fundamental business terminology and concepts
- Extract, analyze, and summarize data into useful business information
- Demonstrate effective verbal skills
- Demonstrate effective written skills

Business Administration

The A.S.B. option in business administration is a preprofessional degree. The academic program leading toward the degree helps you prepare for careers at the operational level of business.

All credits earned in the business administration option can be applied toward the Bachelor of Science in Business if you qualify for admission to that program.

Degree Requirements

You must satisfy the requirements of IPFW (see Part 8) and the Richard T. Doermer School of Business and Management Sciences (listed in this section) and earn a minimum of 63 credits in courses in (1) general education and (2) general business and economics. The final 15 consecutive credits required for this degree should be completed after you have been admitted to the A.S. program.

To remain in the program and graduate, you must earn a grade of C or better in all ENG writing courses and all business and economics courses, and maintain a cumulative GPA of 2.00 or better. Business and economics courses completed by correspondence are not applicable.

IPFW General Education Requirements (41 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(or an approved substitute with placement beyond MA 153)

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

- Additional credits in Area IV: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Additional General Education Credits: 12

Business and Economics Requirements (22 credits)

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K200 - Computer Literacy Concepts for Business

Orientation to microcomputer hardware, software markets, and operating systems. Emphasis on end-user computer responsibilities for managers.

Cr. 0.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

Note

As the requirements for the Bachelor of Science in Business change, the requirements for the A.S.B. option in business administration are also likely to change in order to ensure that the credits in this option can be applied toward the B.S.B.

Total Credits: 63

Chemical Methods (A.S.)

Program: A.S.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

Students will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record keeping. They will master the use of a variety of modern instruments and will become proficient in fundamental organic synthetic methods

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- Analytical Chemistry

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

-

General Chemistry

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships
- Elementary computational skills
- Introductory laboratory skills

-

Organic Chemistry

- Chemical bonding and structure including valence bond and molecular orbital theories
- Reactivity, reaction mechanisms, and properties of the important functional groups
- Synthesis
- Spectroscopic determination of structure
- Material science and bio-organic chemistry

The Associate of Science with a major in chemical methods program helps you prepare for a career as a chemical technician. Many industries have found it desirable to employ persons with a basic knowledge of chemistry. Such industries may be concerned with implementing or monitoring safe waste-disposal procedures, conducting standardized testing that uses routine chemical procedures, observing and measuring properties of materials following some type of compounding procedure, or recording data and making calculations that require some knowledge of chemistry. The A.S. with the major in chemical methods is a technical degree designed to meet such needs and is not recommended for students who wish to pursue a bachelor's program.

To earn the A.S. with a major in chemical methods, you must fulfill the requirements of IPFW (see Part 8) and

complete the following courses. In addition, you must earn a grade of C or higher for each of the chemistry core courses.

Chemistry Core

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Supporting Courses

- Credits in computer science Credits: 3–4
- MA 151 Algebra and Trigonometry Credits: 5

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Electives Credits: 12–13

Total Credits: 61–63

Civil Engineering Technology (A.S.)

Program: A.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.
- Utilize graphic techniques to produce engineering documents.
- Utilize modern surveying methods for land measurement and/or construction layout.
- Estimate material quantities for technical projects.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employ productivity software to solve technical problems.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
 - conduct standardized field and laboratory testing of materials.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - In-class projects requiring design decisions.
- An ability to function effectively on teams.
 - Actively participate in team activities during and outside class.
 - Resolve problems as they arise.
- An ability to identify, analyze and solve technical problems.
 - Determine forces and stresses in elementary structural systems.
 - Solve pressure flow problem.
 - Solve open channel flow problem
 - Close a traverse survey.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
 - Demonstrate effective graphic communication skills.
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Require library research and reporting.
 - Require Web research and reporting.
- An ability to understand professional, ethical and social responsibilities.
 - Demonstrate knowledge of professional code of ethics.
 - Demonstrate knowledge of professional code of ethics.
 - Service learning component.
- A respect for diversity and a knowledge of contemporary professional, societal and global issues.
 - Social studies elective.
 - Humanities elective.
- A commitment to quality, timeliness, and continuous improvement.
 - Quality and timeliness is required aspect of course.
 - Course evaluation performed each semester, software updates.

To earn the A.S. with a major in civil engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and those described below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 11

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

ETCS General Distribution Requirements (11 credits)

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Core and Concentration (Major) Courses (40 credits)

ARET 123 - Construction Graphic Communication

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

CET 104 - Elementary Surveying

Fundamental concepts and practical applications related to the measurement of vertical and horizontal distances and angles utilizing steel tapes, automatic levels and theodolites. Computations of grades, traverses, and area. Basic concepts of topography and its uses.

Preparation for Course

C: MA 154 or MA 159 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 108 - Route Surveying and Design

Preliminary and construction surveys for route location. Calculation and field work for simple and easement curves, grade lines, and slope stakes. Preparation of plans, profiles, and cross-sections from field survey data earthwork estimates. Computer applications.

Preparation for Course

P: 104, ARET 123, and a C or better in MA 159. C: computer science elective.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CET 206 - Construction Surveying

Application of surveying skills relevant to the construction field. Projects include layout of commercial and/or industrial buildings, transfer of horizontal and vertical control, establishment of lines and grades, triangulation, etc.

Instruments used will include total stations, data collectors, etc.

Preparation for Course

C: CET 108.

Cr. 3.

CET 209 - Land Surveying and Subdivision

Subdivision planning, calculations and plotting, water-main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles. Computer applications.

Preparation for Course

P: CET 206.

Cr. 3.

Hours

Class 1, Lab. 6.

CET 253 - Hydraulics and Drainage

Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage determination.

Preparation for Course

C: CET 181.

Cr. 3.

CET 266 - Materials Testing

Testing of construction materials to determine physical and mechanical properties. Preparation of reports from data secured from such tests.

Preparation for Course

P: STAT 301, C: CET 283.

Cr. 3.

Hours

Class 1, Lab. 4-6.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

Total Credits: 68

Commercial Art (A.S.)

Program: A.S. in Commercial Art**Department of Visual Communication and Design****College of Visual and Performing Arts**

Visual Arts Building 213 ~ 260-481-6709 ~ www.ipfw.edu/vpa/vcd

The student learning outcomes for the degree are as follows:

Visual communication and Design provides an exceptional professional degree program which combines creative development in an artistic discipline with career preparation. Visual Communication and Design students demonstrate:

- Effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
- Visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
- Critical thinking and problem solving while also evaluating their ideas and technological competencies.
- Artistic and scholarly collaboration with continuous personal growth to the highest levels of personal integrity and professional ethics.
- Knowledge and skills based upon an understanding of historical traditions that formed ones own and other cultures.
- A commitment to mutual respect through free and open visual inquiry and communication.

This two-year program helps an individual prepare for entry-level employment opportunities in the applied arts, including illustration, layout, package design, display/exhibit design, and computer imaging. An exit portfolio review is required of all A.S. degree seeking students. Upon completion of the A.S. program and a successful portfolio presentation, a student may choose to enter the B.F.A. program in computer art, graphic design, or photography.

To earn the A.S. in commercial art, students must fulfill the requirements of IPFW and the College of Visual and Performing Arts, complete curriculum requirements, and earn a grade of C or better in each required VCD course.

IPFW General Education Requirements Credits: 18

Area I—Linguistic and Numerical Foundations

See Part 2 General Education Requirements for approved courses

- *Quantitative reasoning course Credits: 3*

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Areas II–IV Credits: 9

See Part 2 General Education Requirements for approved courses

Foundations Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Art History Credits: 6**FINA H111 - Ancient and Medieval Art**

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Studio Credits: 27

- Studio electives in VCD or FINA Credits

VCD P253 - Principles of Graphic Design I

Familiarity with the visual vocabulary and the elements of the visual language. The expression of the elements of line, shape, texture, space, and color will be developed through a series of exercises. Different problems in building visuals provide training that artists need to make individual, yet clear, expressive statements.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P254 - Principles of Graphic Design II

Continuation of P253 with emphasis on more involved projects utilizing typography, layout, symbols, and illustration: Calendars, advertising campaigns, publications, typographical/illustrated books, and multicolor projects.

Preparation for Course

P: P253.

Cr. 3.

Hours

Studio 3,

VCD P261 - Layout and Finished Art

Assignments beginning with rough comprehensives, completion through finished art work, paste-ups, and art for reproduction.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P271 - Illustration I

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P272 - Illustration II

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Total Credits: 63

Dental Hygiene (A.S.)

Program: A.S. in Dental Hygiene

Department of Dental Education

College of Health and Human Services

Neff Hall 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the degree are as follows:

- Demonstrate breadth of knowledge in principles of social sciences, basic and dental sciences.
- Demonstrate proficiency in assessing, planning, treating, and evaluating oral conditions and diseases.
- Interpret, evaluate and contribute to current dental research and apply that knowledge to demonstrate dental hygiene skills necessary for life-long learning.
- Demonstrate the highest levels of personal integrity and professional ethics in the delivery of dental hygiene services.
- Promote the dental hygiene profession through service learning activities, affiliations with professional organizations, and partnerships with the community.

- Design, implement, and evaluate community oral health programs appropriate for the diverse, multicultural communities in northeastern Indiana.
- Demonstrate knowledge and skills necessary to be responsible dental professionals and leaders in local, regional, national, and international organizations and communities.
- Demonstrate proficiency in critical thinking, reasoning, questioning, and decision-making skills.
- Demonstrate the written, oral, and multimedia skills necessary to communicate effectively in diverse professional and educational settings for multicultural audiences.

This program involves one year of prerequisite courses and two years of dental hygiene courses. The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association.

An A.S. in Dental Hygiene prepares the student for a career as a dental-health professional who specializes in educational, preventive, and therapeutic oral healthcare. The program combines didactic, laboratory, and clinical courses. Graduates are eligible to take national, state, and regional licensing examinations. Dental hygienists who graduate with an associate degree can work in private dental offices, dental clinics and hospitals, public health facilities, and dental research facilities.

Admission

Admission to the Dental Hygiene program is limited and competitive, and admission to IPFW does not confer acceptance to the Dental Hygiene program. To be admitted to the A.S. program, prospective dental hygiene students must first be admitted to IPFW, complete the prerequisite courses listed below (or equivalent courses at another accredited college or university), then apply separately to the Dental Hygiene program. Applications for acceptance into the Dental Hygiene program **MUST BE received by February 1**, for admission into the program in the following fall semester.

Applicants must maintain a GPA of 3.3 or higher for these prerequisite courses. Meeting the minimum GPA does NOT guarantee a position in the program. Applicants are ranked and accepted each year based on their prerequisite GPA. Therefore, the GPA necessary for admission varies each year with the applicant pool. Admission is competitive and an overall GPA of at least 3.6 or higher is recommended.

Prerequisite Courses

To apply for the A.S. in dental hygiene program, you must complete the following prerequisite courses by May 25 of the application year with a cumulative GPA of 3.3 or higher:

- Prerequisite courses must be completed with a grade of "C-" or better. Courses graded on a pass/fail option will not be considered.
- Required courses may be repeated only one time, with the most recent grade used in the prerequisite GPA calculation.
- Credits in human anatomy and physiology and chemistry must be completed within five years of admission to the professional program. Credits in English composition, speech, psychology, and sociology will be accepted for 10 years. Outdated courses must be retaken.
- Advanced Placement (AP) courses in English and psychology are acceptable, if AP scores are 4.0 or higher. No other AP courses will be accepted.
- Transfer courses accepted by IPFW as "undistributed" must be evaluated by the applicable department (i.e. chemistry or biology) before they are accepted as prerequisite courses.

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material,

transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 26

Class Selection Process

Special Academic Regulations

Acceptance into the Dental Hygiene program is contingent upon an applicant's ability to meet the following additional requirements:

- Demonstrate compliance with the College of Health and Human Services Technical Standards.
- Successful completion of a specified background check at student's expense.
- Submit military discharge papers, if applicable.
- Complete Special Academic Regulations for Students in Dental Hygiene as listed in Dental Education Part 5 .

University Preference

Priority consideration will be given to students who have completed the required pre-dental hygiene courses at IPFW or another Indiana University or Purdue University campus.

Program Requirements

After acceptance into the program, you must fulfill the requirements of IPFW (see Part 8) and Dental Education (Part 4), and satisfactorily complete the following courses:

NOTE: It is recommended that microbiology (BIOL 220) be completed prior to beginning the Dental Hygiene program. Microbiology taken more than five years prior to admission into the professional program must be retaken.

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

DAST A112 - Dental and Medical Emergencies and Therapeutics

A course including recognition and clinical experience of systemic emergencies. Comprehensive study of the physiological, toxicological, and therapeutic effects of drugs on living organisms, with emphasis on their rational application in the treatment of disease. Content includes discussions of drugs that are widely prescribed by physicians

and dentists.

Preparation for Course

P: DAST A111.

Cr. 2.

DAST A300 - Special Topics in Dental Education

An advanced course for dental education majors. Supervised reading or projects on approved topics in dentistry. Hours, subject matter, and evaluation to be determined by faculty.

Preparation for Course

P: admission to dental assisting, dental hygiene, or dental laboratory technology program, and chair's permission.

Cr. 1-4.

DHYG H211 - Head and Neck Anatomy

A detailed study of the anatomy of the head and neck. Some attention is given to oral embryology and the growth of tooth structure.

Cr. 2.

DHYG H214 - Oral Anatomy

A study of the morphology, structure, and function of deciduous and permanent teeth and surrounding tissues, also including osteology of maxilla and mandible, nerve and vascular supply of teeth, muscles of mastication, with reinforcing laboratory clinical application.

Cr. 3.

Variable Title

(V.T.)

DHYG H215 - Pharmacology and Therapeutics (lecture)

Actions and uses of drugs and theory of anesthetics; emphasis on drugs used in dentistry.

Cr. 2.

DHYG H216 - Chemistry and Nutrition- First Year

Specific ideas in chemistry are correlated with working principles in dentistry. Previous knowledge of chemistry required. Dental aspects of nutrition and dietetics are given special attention.

Cr. 2-3.

DHYG H217 - Preventive Dentistry

Detection and prevention of dental diseases.

Cr. 2.

DHYG H218 - Fundamentals of Dental Hygiene (lecture and lab)

An introduction to the dental and dental hygiene professions, including the basic didactic, laboratory, and clinical practice for the performance of dental hygiene services.

Cr. 5.

Hours

Class 3, Lab 4.

DHYG H219 - Clinical Practice I

Application of dental prophylaxis technique to child and adult patients; clinical experience in oral inspection of hard and soft tissues; taking complete medical and dental histories; fluoride application procedures; X-ray exposure and development; patient education; sterilization techniques.

Preparation for Course

P: DHYG H218.

Cr. 3-4.

Hours

Class 1, Clinic 9.

DHYG H221 - Clinical Dental Hygiene Procedures

Clinical assignment for instruction and experience in performing dental hygiene services.

Cr. 1-2.

DHYG H301 - Clinical Practice II

Continuation of H219, including taking of study models, dietary surveys, application for other preventive measures, root planning and periodontal charting; the inclusion of expanded functions of the hygienist. H301 must precede H302.

Preparation for Course

P: DHYG H219.

Cr. 4-5.

Hours

Class 1, Clinic 12.

DHYG H302 - Clinical Practice III

Continuation of H219, including taking of study models, dietary surveys, application for other preventive measures, root planning and periodontal charting; the inclusion of expanded functions of the hygienist. H301 must precede H302.

Preparation for Course

P: DHYG H219.

Cr. 4-5.

Hours

Class 1, Clinic 12.

DHYG H303 - Radiology (lecture and lab)

Principles associated with production of X-rays and manipulation of X-ray equipment.

Cr. 1-2.

Hours

Class 2, Lab 2.

DHYG H304 - Oral Pathology

Developmental abnormalities and acquired disorders of teeth and surrounding structure.

Cr. 2.

DHYG H305 - Radiology Clinic I

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1-2.

Hours

Class 1, Clinical 3.

DHYG H306 - Radiology Clinic II

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1.

Hours

Class 1, Clinic 3.

DHYG H307 - Radiology Clinic III

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1.

Hours

Class 1, Clinic 3.

DHYG H308 - Dental Materials

Composition, physical and chemical properties of materials used in dentistry with opportunity for experience in their manipulation.

Cr. 2-3.

Hours

Class 1, Lab 2.

DHYG H309 - Practice of Community Dental Hygiene

Supervised field experience in a school health program.

Cr. 2.

Hours

Class 1, Lab. 2,

DHYG H320 - Practice Management, Ethics, and Jurisprudence

The study of the organization, administration, and prudent operation of professional and financial resources for a successful dental practice in a community.

Cr. 1-2.

DHYG H321 - Periodontics

A study of periodontal disease including the anatomy, classification, etiology, treatment, and relationship to systemic conditions.

Cr. 1-2.

DHYG H344 - Senior Hygiene Seminar

Systematic and comprehensive review of basic science courses with emphasis on their relationships to clinical practice; current concepts in multiple auxiliary delivery systems and practice management concepts will be included.

Cr. 1-2.

DHYG H347 - Dental Public Health

A study of public health principles as they relate to dentistry. The students will be introduced to those aspects of public health that will enable them to plan, administer, and evaluate a dental health program.

Cr. 3-4.

Hours

Class 2, Lab 2.

Total Credits: 61

Dental Laboratory Technology (A.S.)

Program: A.S. in Dental Laboratory Technology

Department of Dental Education

College of Health and Human Services

Neff Hall Room 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the degree are as follows:

Graduates of the Dental Laboratory Technology program will:

- Demonstrate the breadth of knowledge in the principals of restorative dental prosthesis and dental sciences.
- Demonstrate proficiency in the technical competency skills necessary to perform at or beyond an entry-level position in a dental laboratory.
- Comprehend and apply dental terminology, and technical advancements in the dental laboratory technology profession.
- Demonstrate ethical work habits and behavior patterns that are required for the success and advancement in the dental profession.
- Demonstrate the need for continued learning and professional development locally, nationally and internationally in the field of dental laboratory technology.
- Demonstrate the written, oral and multimedia skills necessary to communicate effectively in multicultural/diverse settings.
- Demonstrate skills in critical thinking, interpretation, reasoning, questioning, and decision making in the dental profession.
- Demonstrate proficiency in interpreting and evaluating current dental prosthetic research and apply that knowledge to demonstrate dental laboratory skills necessary for life-long learning.
- Promote the dental laboratory technology profession through service learning activities, affiliations with professional organizations, and partnerships with dental companies and the community.

The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association. A Dental Laboratory Technology degree prepares you for a career as a dental health professional in the construction of restorative dental prostheses prescribed by a dentist. All courses are offered during daytime hours. Upon completion of the program, you are eligible to take a written Comprehensive Examination and one written Specialty Examination. After successful completion of these two written examinations, an additional practical examination may enable you to become a certified dental technician. These examinations are offered by the National Board for Certification.

Admission

Admission to IPFW does not confer admission to the program. You must apply separately to both IPFW and the dental laboratory technology program. You must contact the director of dental laboratory technology for specific information about the program. You may begin the program only in the fall.

Program Requirements

To earn an A.S. in dental laboratory technology, you must fulfill the requirements of IPFW (see Part 8) and the Department of Dental Education, and satisfactorily complete the following courses:

IPFW General Education Requirements (12 credits)

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Dental Laboratory Technology Program Requirements**DLTP D111 - History, Ethics, Organization**

History and background of dental laboratory technology, including dental practice acts, work authorization, dental ethics as applicable to dental auxiliaries.

Cr. 1.

DLTP D112 - Dental Anatomy

A study of individual tooth morphology; its relationship, alignment, and function in the oral cavity.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D113 - Basic Physics, Chemistry, and Dental Materials

The chemical and physical properties and requirements of restorative and prosthetic materials will be taught. Manipulative procedures are performed in the laboratory.

Cr. 5.

Hours

Class 2, Lab 6.

DLTP D114 - Occlusion

The interdigitation of teeth and their relationship to function, phonetics, and esthetics will be introduced. Waxing techniques to obtain these desired results will be utilized in the laboratory.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D125 - Crown and Bridge Prosthodontics I

An introduction to the types and uses of fixed restorations and techniques of fabrication. The theories and concepts for the use of different types of restorations will be included.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D126 - Orthodontics/ Pedodontics Appliances I

An introduction to the basic laboratory skills pertinent to fabrication of orthodontic and pedodontic appliances. Special emphasis placed on various wire bending techniques and designs. Students will also be introduced to the pouring and trimming of diagnostic casts.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D127 - Complete Denture Prosthodontics I

An introduction to the setup and arrangement of artificial teeth. Waxing, investing, processing, and finishing procedures will also be taught. The basics of denture repair will be introduced.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D128 - Partial Denture Prosthodontics I

An introduction to the theories and procedures of partial framework fabrication. The procedures of design, duplicating, waxing, investing, casting, and finishing will be introduced.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D129 - Dental Ceramics I

An introduction to the types and uses of fixed restorations and techniques in the fabrication of porcelain to metal restorations.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D215 - Crown and Bridge Prosthodontics II

Fixed procedures are continued with emphasis on multiple unit castings. Theory and techniques to be included are pontic design, acrylic veneer design, and soldering.

Preparation for Course

P: DLTP D125.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D216 - Orthodontics/ Pedodontics Appliances II

The skills introduced in the basic course will be amplified. More intricate wire bending exercises will be used. Acrylic placement, basic soldering, and welding techniques will be introduced.

Preparation for Course

P: DLTP D126.

Cr. 3.

Hours

Class 1, Lab4.

DLTP D217 - Complete Denture Prosthodontics II

Setup and arrangement procedures using various degrees of posterior teeth will be covered. The characterization of dentures using tooth arrangement, waxing, and finishing procedures will be introduced. Students will also be taught refitting techniques such as relines and rebases.

Preparation for Course

P: DLTP D127.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D218 - Partial Denture Prosthodontics II

The fabrication of various designed frameworks will be utilized. The arrangement and processing of artificial teeth and the repairing of frameworks will be introduced.

Preparation for Course

P: DLTP D128.

Cr. 3.

Hours

Class 1, Lab 4.

DLTP D219 - Dental Ceramics II

Porcelain to metal procedures are continued with emphasis on multiple unit restorations. An introduction to soldering techniques and porcelain jacket crowns will be included.

Preparation for Course

P: DLTP D129.

Cr. 4.

Hours

Class 1, Lab 6.

DLTP D222 - Practical Laboratory Experience

A practicum in dental laboratory procedures in one of the five specialty areas. This practicum may be given on campus or at an extramural site.

Cr. 4-6.

Hours

Class 1, Lab 10.

Credits from among two of the following: Credits: 8

DLTP D225 - Specialty in Crown and Bridge Prosthodontics

This course will offer the student an opportunity to specialize in crown and bridge fabrication. Speed and accuracy in the procedures of fabrication will be stressed.

Preparation for Course

P: DLTP D215.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D226 - Specialty in Orthodontics/ Pedodontics

This course will offer the student an opportunity to specialize in orthodontic and pedodontic appliance fabrication. Speed and accuracy in the procedures of appliance fabrication will be stressed.

Preparation for Course

P: DLTP D216.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D227 - Specialty in Complete Denture Prosthodontics

This course will give students the opportunity to specialize in complete denture fabrication. Emphasis will be placed on speed and accuracy in all phases of denture fabrication.

Preparation for Course

P: DLTP D217.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D228 - Specialty in Partial Denture Prosthodontics

This course will give students the opportunity to specialize in framework fabrication. Speed and accuracy in the procedures of framework fabrication will be stressed.

Preparation for Course

P: DLTP D218.

Cr. 4.

Hours

Class 2, Lab 4.

DLTP D229 - Specialty in Dental Ceramics

This course will give students the opportunity to specialize in dental ceramic restoration fabrication. Emphasis will be placed on speed and accuracy in all phases of restoration fabrication.

Preparation for Course

P: DLTP D219.

Cr. 4.

Hours

Class 2, Lab 4.

Total Credits: 72

Early Childhood Education (A.S.)

Program: A.S.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The A.S. in early childhood education program provides preparation for workers in nursery schools, Headstart programs, and preschool programs. It does not qualify you for teacher licensure. However, most of the courses can be applied toward a bachelor's degree in elementary education which does lead to teacher licensure.

To earn the A.S. in early childhood education, you must fulfill the requirements of IPFW (see Part 8) and the School of Education.

IPFW General Education Requirements Credits: 30

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

(corequisite with EDUC E317) Credits: 3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

(corequisite with EDUC W200) Credits: 0.

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 1

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

One of the following: Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits:3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

Professional Courses Credits: 34

(a grade of B or better is required in all Professional Courses)

EDUC E317 - Practicum in Early Childhood Education

Methods and materials used in the education of children from 3 to 6 years of age. Observation and participation. Final course in endorsement/ degree.

Cr. 4.

(corequisite with EDUC H340)

EDUC E330 - Infant Learning Environments

Students will broaden their knowledge base of appropriate instructional strategies to enhance infant-toddler development, caregiving skills, and knowledge of appropriate learning environments, and will apply strategies and knowledge in providing care and educational experiences.

Cr. 3.

EDUC E333 - Inquiry in Mathematics and Science

Focuses on planning and managing appropriate science and math experiences with children who are 3 to 8 years of age. Opportunity for exploring, developing, experimenting, and evaluating instructional materials and their inherent possibilities for children's learning. Planning appropriate inquiry-oriented experiences will be stressed.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E335 - Introduction to Early Childhood Education

This course has a dual focus. First, it is an overview of the field including an historic perspective, program models, goal of early childhood education, and professional organizations. The second focus emphasizes learning observation skills, understanding the characteristics of young children, teacher-child interaction, and classroom management skills.

Cr. 3.

EDUC E336 - Play as Development

Includes theories and development of play and how it can be guided. Shows how children use play to develop individually; understand the physical, social, and cognitive environment; and develop physical and motor skill and creative ability. Includes a section on the selection and construction of play materials.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E337 - Classroom Learning Environments

This course focuses on the curriculum aspects of early childhood programs designed to meet ethnic and cultural differences and planning, utilizing, and evaluating learning environments. Selection of materials and activities and the acquisition of skills for using these to stimulate children's development are major focuses.

Cr. 3.

(pre- or corequisite EDUC P249)

EDUC E338 - The Early Childhood Educator

Includes the role of the teacher as a professional educator, including professional responsibilities, school and community relations, and involvement in professional organizations. A major emphasis is on parent involvement and parent education.

Cr. 3.

EDUC E346 - Discipline/Parenting for Young Children

A study of discipline of children in early childhood settings for interaction in teaching and learning environments with an emphasis on working with parents and teachers.

Cr. 3.

EDUC E347 - Language Arts for Early Childhood

This course describes the development of language and literacy in the early years. Curriculum and instructional strategies in varied early childhood settings are included.

Cr. 3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

(corequisite with EDUC P249, EDUC E330, EDUC E337) Credits: 0.

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Total Credits: 64

Electrical Engineering Technology (A.S.)

Program: A.S.

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the degree are:

Graduates will have:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.

- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.
- A commitment to quality, timeliness, and continuous improvement.

The two-year A.S. EET program is a combination of courses in electricity, electronics, computers, mathematics, science, and general academic areas. The program helps students prepare for employment as electrical/electronic or computer technicians, and provides knowledge in fields such as computer electronics, local area networking, industrial electronics, communication electronics, military electronics, automation, electronics servicing, and electrical power.

The CEIT department also offers the Bachelor of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the A.S., you must fulfill the requirements of IPFW (see Part 8) and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 4

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses Credits: 40

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

ECET 146 - Digital Circuits II

Basic digital system techniques with emphasis on programmable logic and ASIC theory. Computer-aided design is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

P: ECET 111. C: ECET 114 or CS 114.

Cr. 3.

Hours

Class 2, Lab. 2.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 207 - AC Electronics Circuit Analysis

AC circuits including the j operator, phasors, reactance, and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single-phase and three-phase circuits. Computer-aided analysis of circuits is used.

Preparation for Course

P: ECET157 and MA 154.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 231 - Electrical Power and Controls

This course introduces magnetic materials and properties followed by analysis of transformers and power conditioning equipment, induction motors, and single-phase and three-phase power systems. Motor control devices, programmable logic controllers, PLC input and output devices, and power systems communications and monitoring are introduced.

Preparation for Course

P: ECET 152 or 207 and MA 227.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 296 - Electronic System Fabrication

This course introduces project planning and basic concepts in electronic design automation (EDA). The student develops the project from an engineering rough sketch to a finished and test printed circuit board by utilization of EDA. New construction and testing techniques are introduced. The final product is presented in an oral and written report.

Preparation for Course

P: ECET 204.

Cr. 2-3.

Hours

Class 1, Lab. 2-3.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

or

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Required non-ECET technical course Credits: 3

CPET 190 - Problem Solving with MATLAB

A study of the principles and practice of problem solving using MATLAB. Topics include MATLAB basics, functions and variables, file input and output, user-defined functions and program design, complex data manipulation, graphical user interface, and technical problem-solving applications, etc. The students shall gain hands-on experience through several programming assignments and practice strategies for collaborative problem solving such as creating specifications, brainstorming, sketching an idea, solution evaluation, and solutions testing.

Preparation for Course

P: MA 153 and ECET 114 or CS 114.

Cr. 1-4.

Required Math Courses Credits: 10

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

For A.S. can substitute CHM 111 or STAT 301 for MA 228

Total Credits: 69

English Concentration (A.A.)

Program: Concentration A.A.

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- Students demonstrate the acquisition of a basic knowledge of language, writing, and British and American literature necessary for pursuit of a baccalaureate degree in English.
- Students demonstrate the ability to apply basic critical thinking skills to the analysis of a variety of texts.
- Students display the ability to communicate a basic understanding of English literature with rhetorical precision, clarity, and critical awareness.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in English (see Part 5), you should take the second year foreign-language courses as electives for the A.A.

- ENG L202 - Literary Interpretation
- Credits in American literature Credits: 3
- Credits in British literature before 1700 Credits: 3
- Credits in British literature after 1700 Credits: 3
- Credits in language study Credits: 3
- Credits in ENG W203 or a 300-400-level English writing course Credits: 3

French Concentration (A.A.)

Program: Concentration A.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language;
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Concentration Requirements

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in French, see Part 5 for B.A. requirements.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

One of following Credits: 3

FREN F326 - French in the Business World

Study of the language of business activities in France, with an introduction to the structure and functioning of various aspects of French economic life. Useful for students preparing for the proficiency examinations of the Chambre de Commerce de Paris.

Preparation for Course

P: FREN F204 (or equivalent).

Cr. 3.

FREN F330 - Introduction to Translating French and English

A comparative study of the style and grammar of both languages with focus on the difficulties involved in translating. Introduction to the various tools of the art of translation.

Preparation for Course

P: FREN F317.

Cr. 3.

General Studies (A.A.G.S.)

Program: A.A.G.S.

Division of Continuing Studies

The student learning outcomes for the degree are as follows:

- Speak and write precisely, clearly and persuasively.
- Understand the nature and diversity of individuals, organizations, cultures, and societies.
- Apply their knowledge in written, oral communication, or technical competencies.
- Apply the knowledge gained across interdisciplinary boundaries.

General Studies offers a wide variety of personalized degree options to the traditional and nontraditional student. Students may individually tailor their program to combine a substantial core of courses basic to a traditional university education and study in career-related areas. Within the flexible framework of degree requirements, students may design an undergraduate program that can more readily meet their career and personal-development goals than can a traditional major. Students will be encouraged and assisted in developing a unique academic program complementing their individual interests, abilities, and intellectual and practical concerns.

In addition to taking advantage of the wide variety of daytime, evening, and weekend classes at IPFW, students may choose to earn credit toward their degree through correspondence study. Students may also earn credit by examination, and in some cases earn credit for significant, documentable self-acquired competencies when the learning outcomes have been comparable to those of university-level work. Consideration is given to all previously earned college credit from other accredited institutions. The Associate of Arts in General Studies and Bachelor of General Studies programs may also be tailored to the needs of those unable to study on campus during regularly scheduled periods. Both degrees may be completed online.

Both programs include courses in broad categories called required areas of learning (listed below) and elective credit that students may earn in any IPFW program. The required areas of learning provide broad exposure to the humanities, social sciences, and sciences, while the electives permit students to explore areas of interest, receive credit for prior university-level experiential learning, and tailor the degree to their individual needs. In each plan of study, students must demonstrate competency in each of the following areas: written communication (two courses), oral communication, mathematics, computer literacy, and a diversity course.

After students are admitted to a general studies degree program, students will develop a plan of study to meet their objectives. An advisor will provide assistance in this effort. For further information, refer to the current Indiana University School of Continuing Studies *General Studies Degree Bulletin*.

To earn an A.A.G.S., students must complete the following requirements:

IPFW General Education Requirements

Area I- Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Required Areas of Learning

General studies is a university-wide degree program, certified through Indiana University's School of Continuing Studies. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities Credits: 6

(depending upon course selection for general education)

Afro-American Studies	Foreign Language
Classical Studies	History
Communication	Journalism
Comparative Literature	Music
English (except R150 and W130)	Philosophy
Film	Religion
Fine Arts	Theatre
Folklore	Visual Communication and Design

Science and Mathematics Credits: 9

(depending upon course selection for general education)

- ANTH B200 and E445 (only)
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K214, K215, and K216)
- ECON E270 (only)
- Entomology
- *ETCS 106
- Forestry and Natural Resources
- GEOG G107, G109, G315 (only)
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- PSY 120, 201, 310, 314, 329, and 416 (only)
- SOC S351 (only)
- SPEA K300 (only)
- Statistics

*required course

Social and Behavior Sciences Credits: 12

(depending upon course selection for general education)

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA J101 (only)
- WOST W210 (only)

12 credits in each required area of learning, including courses from at least two departments in each area

General Elective Courses Credits: 24

In consultation with an advisor, you are urged to concentrate electives in related areas.

Note

Students must complete at least 10 of the above credits after admission to the program. No more than 15 credits can be in any one subject. No more than 15 credits toward the AAGS may be awarded for successful completion of external exams such as CLEP. At least 15 credits must be taken within the IU system or as a Purdue student at IPFW.

Total Credits: 60

German Concentration (A.A.)

Program: Concentration A.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language;
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I: (9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory
Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning; ANTH L200 or LING L103 is recommended as a selection from IPFW

General Education Area III. If you plan to continue for a bachelor's degree with a major in German, see Part 5 for B.A. requirements.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

One of following Credits: 3

GER G315 - Business German

Improvement of speaking, writing, listening, and reading skills. Concentration on the language of the German business world. Discussion, grammar, exercises, and letter writing. Conducted in German.

Preparation for Course

P: GER G204 (or equivalent).

Cr. 3.

GER G319 - German Language Skills II

Intensive work in conversation and composition based on readings in areas of current or topical interest with emphasis on contemporary Germany.

Preparation for Course

P: GER G204.

Cr. 3.

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

History Concentration (A.A.)

Program: Concentration A.A.

Department of History

College of Arts and Sciences

The student learning outcomes for the degree are as follows:

- Have a basic introductory knowledge of the history of the United States, Europe, and other world areas;
- Have a basic understanding of history as a method of intellectual investigation;
- Have an appreciation for the relationship of the past to the culture and society of today; and
- Have a foundation for making a decision to continue toward the B.A. in history.

In addition to the courses listed below, you must complete MA 153 or 168 or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in history, see Part 5 for B.A. requirements.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I: (9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory
Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Program Requirements

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

- Credits in upper-level American history Cr. 3.
- Credits in upper-level European history Cr. 3.
- Credits in upper-level Other World history Cr. 3.

Industrial Engineering Technology (A.S.)**Program: A.S****Department of Manufacturing & Construction Engineering Technology and Interior Design****Technology College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- an appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
 - Technical expertise in quality, metrology, advanced SPC, SQC, TQM, ISO standards, and design of experiments.

- Technical expertise in ergonomics, work methods design, optimization, engineering economy, and cost estimating.
- Technical expertise in facilities layout, production planning and control, queuing theory, modeling, and simulation.
- Technical expertise in CAD, engineering graphics, GC&T, gage capability studies, and measurement uncertainty.
- Technical expertise in materials, manufacturing processes, design for manufacturing and assembly, and CNC machining.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively.
 - An ability to communicate effectively.
 - An ability to communicate effectively through oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues related to the profession.
 - A knowledge of and respect for diversity.
 - A knowledge of contemporary societal issues related to the profession.
 - A knowledge of contemporary global issues related to the profession.
- A commitment to quality, timeliness, and continuous improvement.
 - A commitment to Quality.
 - A commitment to timeliness.
 - A commitment to continuous improvement.

This program prepares graduates with knowledge, technical, analytical, and managerial skills necessary to develop, implement, and improve integrated systems in manufacturing and service industries that include people, materials, equipment, information, and energy. Graduates will be prepared for careers in higher levels of system design, integration, and management. To earn the B.S. with a major in industrial engineering technology, you must fulfill the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and of the A.A., and complete the following credits, earning a grade of C or better in those courses that serve as prerequisites:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

Grade of C or better required for the following courses.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area II—Natural and Physical Sciences

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Grade of C or better required

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Grade of C or better required

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Core and Concentration (Major) Courses

ETCS 101 - Introduction to Engineering, Technology, and Computer Science

Introduction to the professions of engineering, engineering technology, and computer science. Focus is on academic, career, and professional development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

IET 224 - Production Planning and Control

A survey of production inventory control procedures including material requirements planning, just-in-time methods, and project management.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3,

IET 257 - Ergonomics

The course covers application of ergonomic principles to the design of interface between human and machine systems, and consideration of human abilities and limitations in relation to design of equipment and work environment.

Preparation for Course

P: MET 106.

Cr. 3.

Hours

Class 3,

IET 267 - Work Methods Design

An introduction to workplace design and work measurement, including time and motion study, ergonomics, and process standardization.

Preparation for Course

P: 105.

Cr. 3.

Hours

Class 3,

Grade of C or better required

IET 310 - Plant Layout and Material Handling

Analysis of material flow in a manufacturing facility.

Preparation for Course

P: MET 104, MA 159.

Cr. 3.

Hours

Class 3,

Grade of C or better required

MET 104 - Technical Graphics Communications

An introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

Preparation for Course

C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

MET 106 - Analytical and Computational Tools in MET

Introduction to analytical and computational problem-solving techniques. The electronic calculator, the factor-label method of unit conversions, engineering graphs, and the computer are used to solve problems. Computer emphasis is on spreadsheet analysis, graphics, and generation of technical reports through the integrated use of software packages.

Cr. 2.

Hours

Class 1, Lab. 2,

Grade of C or better required

MET 180 - Materials and Processes

Application and characteristics, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

Preparation for Course

P: 106; C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

MET 223 - Introduction to Computer- Aided Modeling and Design

An introduction to computer-aided modeling and design (CAMD) with hands-on experience in the operation of an interactive computer graphics system. Generation of 3-D computer models and preparation of working drawings including geometric dimensioning and tolerancing.

Preparation for Course

P: 104, 106.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

MET 335 - Basic Machining

A comprehensive survey of machine tools as they are used in converting workpieces into finished products with consideration of cost, quality, quantity, and interchangeability and safety requirements. Actual operation analysis of many machine tools set-ups will be provided for comparison studies.

Preparation for Course

P: 104, 180, PHYS 218.

Cr. 3.

Hours

Class 2, Lab. 3,

Grade of C or better required

Additional Required Technical Courses

Grade of C or better required for the following courses.

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required Support Courses

Grade of C or better required for the following course.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 64

Information Systems (A.S.)

Program: A.S.

Department of Computer and Electrical Engineering Technology and Information Systems

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to analyze a problem and identify and define the computing appropriate to the discipline.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.
- An understanding of processes that support the delivery and management of information systems within a specific application environment.

This program is focused on fundamental computing courses. All requirements may be applied to the B.S. program in information systems. Graduates of the A.S. program typically continue in the B.S. program, although they are qualified for employment opportunities in the computer field.

To earn the A.S. with a major in information systems, you must fulfill the requirements of IPFW (see Part 8) and complete the following courses. Only courses in your major field in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades will be accepted in other courses.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 6

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(or equivalent)

Area III—The Individual, Culture, and Society Credits: 3**OLS 252 - Human Relations in Organizations**

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Major Requirements Credits: 23

- CS elective (200+ level) approved by advisor Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

IST 280 - Survey of Information Technology

An introduction to information technology development from a perspective using business fundamentals that relate to information systems and the analysis and design of those systems. Topics include competitive, strategic, and technological advantages; collaborative partnerships within e-business; decision making; and databases. Supply chain management, customer relationship management, enterprise resource planning, and other applications will be surveyed.

Preparation for Course

P: IST 140 or CS 114 or IST 155 or CS 155, BUS W100 or IET 105.

Cr. 3.

One of the following Credits: 3

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

IST 140 - Introduction to Visual Basic Applications

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and data bound controls: data handling; grids; validations and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

Supporting Courses Credits: 18

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

One of the following Credits: 3

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

One of the following Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Approved Laboratory Course Credits: 4

In Biology, Chemistry, Earth and Space Sciences, Or Physics

Elective Credits: 11

Approved Laboratory Course Credits: 4

In Biology, Chemistry, Earth and Space Sciences, Physics, or Astrology with Geology G100 lab.

Approved Elective Credits: 7

Total Credits: 64

Interior Design (A.S.)

Program: A.S.

**Department of Manufacturing & Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students are able to advance their learning.
 - Be able to interact with multiple disciplines.
 - Have opportunities for design work experience.
- Students have the attitudes, traits, and values of professional responsibility, accountability, and effectiveness.
 - Have critical, analytical, and strategic thinking abilities.
 - Be able to have creative thinking (exhibit a variety of ideas, approaches, concepts with originality and elaboration).
 - Have the ability to think visually and volumetrically.
 - Have active listening skills leading to effective interpretation of requirement.
- Students have a foundation in the fundamentals of art and design; theories of design, green design, and human behavior; and discipline-related history.
 - Understanding design elements (for example, space, line, mass, shape, texture) and principles (for example, scale, proportion, balance, rhythm, emphasis, harmony, variety).
 - Understanding color principles, theories, and systems (for example, additive and subtractive color; color-mixing; hue, value, and intensity; the relationship of light and color).
 - Understanding theories of design and design composition.
 - Understanding principles of lighting design (for example, color, quality, sources, use).
 - Understanding of the history of architecture and finishes.
- Students understand and apply the knowledge, skills, process, and theories of interior design.
 - Apply 2-dimensional design elements and principles in interior design projects.
 - Select and apply color in interior design projects.
 - Have competent schematic design, concept development, and problem solving skills.
- Students communicate effectively.
 - Be competent in drafting with computer-aided techniques.
 - Be competent in digital 3D modeling.
 - Be competent in illustrative sketching.
 - Be competent in presentation of color, materials, and furnishings (for example, sample boards, collages, mock-ups, digital representations).
 - Be able to express ideas clearly in oral presentations and critiques.
 - Be able to render by any medium, manual or computer-generated, that successfully communicates the design intent.
 - Be able to communicate 3-dimensional space and form, such as in perspectives and models (computer-generated or manual).

The associate degree in interior design prepares you for employment as an interior design assistant, residential designer, kitchen design consultant, lighting and color consultant, drafts person, CAD operator, or product representative. You are prepared for these responsibilities through a blend of technical and practical design courses. The program is enhanced by overseas travel and study opportunities. Graduates will be prepared for immediate employment and continuation in the B.S. program.

To earn the A.S. with a major in interior design, you must satisfy the requirements of IPFW (see Part 8) and the

College of Engineering, Technology, and Computer Science (see Part 4); earn a grade of C or better in ENG W131 and each required INTR course; and complete the requirements listed below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 3

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

Area IV—Humanistic Thought Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

Core and Concentration (Major) Courses Credits: 44

ARET 123 - Construction Graphic Communication

An introduction to graphic communication in the architectural, engineering, and construction (AEC) industry. Manual drafting, technical sketching, and CAD software are utilized in the production of working drawings. Project emphasis is distributed among architectural, civil engineering, and interior design topics.

Cr. 3.

Hours

Class 2, Lab. 2-4.

ARET 124 - Architectural Engineering Construction I

A study of residential building and the graphic and written documents required for its construction. CAD familiarity is required and a model may be required.

Preparation for Course

P: ARET 123; C: ARET 167.

Cr. 3.

Hours

Class 1, Lab. 4-6.

ARET 167 - Construction Systems and Materials

Properties of construction materials and components and an introduction to their use in various construction systems.

Cr. 3.

ARET 281 - Environmental Equipment for Buildings I

A survey of basic environmental control parameters of heating, ventilating, air conditioning, plumbing, lighting, electricity, and their equipment (size and shapes) and the physiological effects on mankind. Emphasis placed on definitions, types of systems, and physical characteristics of equipment.

Preparation for Course

P: ARET 124, MA 153.

Cr. 3.

CNET 276 - Specs, Contracts, and Codes

Study of general conditions and major phases of construction codes, specifications, agreements, contracts, liens, and bonds.

Cr. 3.

CNET 280 - Quantity Estimating

A study of estimating practices. Development of skill in preparing manual estimates of material quantities required in construction. Introduction to labor and material costs, electronic media, and computer applications.

Preparation for Course

P: ARET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

INTR 111 - Introduction to Interior Design

Introduction to requirements of design with emphasis on people, space, scale, light, color, materials, furniture, accessories, and budget in the residential environment.

Preparation for Course

P: INTR 121.

Cr. 3.

INTR 112 - Residential Interior Design II

Advanced techniques of furniture arrangements and design principles. Coordination of interior design principles throughout a complete residential environment (i.e., house, apartment, condominium). Estimating of drapery, floor, and wall coverings as it applies to various projects.

Preparation for Course

P: 111 with a C or better required, INTR 123, and ARET 123.

Cr. 3.

INTR 121 - Freehand Sketching

Drawing in the "freehand" (nonmechanical) method will be presented in pencil, ink, and markers. The course is aimed at the beginning design student. It will utilize objects of interior environment as a means of understanding various drawing principles and familiarize the student with basic rendering techniques.

Cr. 3.

INTR 123 - Perspective Drawing

Perspective drawing of building interiors and rooms in one- or two-point projection incorporating light, shadow, and furnishings are emphasized. Application of texture and color are presented in multimedia.

Preparation for Course

P: 121.

Cr. 3.

INTR 131 - Decorative Materials and Accessories I

History of textiles, fiber content, weaves, and designs. Functional uses of fabrics for interiors (i.e., windows, upholstery). Emphasizes decorative treatment of textile patterns and uses of materials through design problems. The assembling of notebooks is required.

Cr. 3.

INTR 201 - CAD for Interior Design

The study and application of computer-aided design and drafting (CADD) as a means of visualizing complex spatial designs of the built environment, reducing the amount of time needed to produce complicated hand-constructed

drawings.

Cr. 3.

INTR 206 - Portfolio and Professional Presentation

Students will study portfolio design, materials selection, and publication methods. Graphic themes, reprographic techniques, and binding or alternative presentation will be studied. Development of a personal portfolio is required. Course may include development of a public exhibition of student work.

Preparation for Course

P: 112 and 201; C: 241.

Cr. 1

INTR 241 - Lighting and Color Design

Study of how natural and artificial lighting and color affect the human environment. Principles of physical and psychological aspects of lighting and color (i.e., hue, value, and intensity) are applied to design theory.

Preparation for Course

P: 112, 201 and ARET 281; C: PHY 125.

Cr. 3.

VCD F102 - Color Design

This is an introductory course presenting color and design, color theory, cultural uses and meaning, and the history of color in art and design. Additive and subtractive color palettes and the observation of hues as seen in nature will be explored through lectures and studio projects.

Cr. 3.

Total Credits: 65

Labor Studies (A.S.)

Division of Labor Studies

Program Offered: A.S.L.S.

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the Associate of Science in Labor Studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses:

Program Requirements

Credits from the Labor Studies Core Credits: 15

Credits from the following: 15

LSTU L100 - Survey of Unions and Collective Bargaining

A survey of labor unions in the United States, focusing on their organization and their representational, economic, and political activities. Includes coverage of historical development, labor law basics, and contemporary issues.

Cr. 3.

LSTU L101 - American Labor History

A survey of the origin and development of unions and the labor movement from colonial times to the present. The struggle of working people to achieve a measure of dignity and security will be examined from social, economic, and political perspectives.

Cr. 3.

LSTU L110 - Introduction to Labor Studies: Labor and Society

An introduction to the changing role of labor in society. The course will emphasize a comparative approach to issues confronting labor organizations.

Cr. 3.

LSTU L190 - The Labor Studies Degree

Required for all DLS majors. This course will provide an introduction to the labor studies degree and to the knowledge and skills needed by students to progress toward a degree in a reasonable time frame. Students will learn how to build a plan of study that takes advantage of both credit for prior learning and new learning opportunities.

Cr. 1.

LSTU L200 - Survey of Employment Law

Statutes and common law actions protecting income, working conditions, and rights of workers. Topics include workers' compensation, unemployment compensation, fair labor standards, Social Security, retirement income protection, privacy, and other rights.

Cr. 3.

LSTU L201 - Labor Law

A survey of the law governing labor-management relations. Topics include the legal framework of collective bargaining, problems in the administration and enforcement of agreements, protection of individual employee rights.

Cr. 3.

LSTU L203 - Labor and the Political System

Federal, state, and local governmental effects on workers, unions, and labor-management relations; political goals; influences on union choices of strategies and modes of political participation, past and present; relationships with community and other groups.

Cr. 3.

LSTU L205 - Contemporary Labor Problems

An examination of some of the major problems confronting society, workers, and the labor movement. Topics may include automation, unemployment, international trade and conglomerates, environmental problems, minority and women's rights, community relations, changing government policies.

Cr. 3.

LSTU L210 - Workplace Discrimination and Fair Employment

Examines policies and practices that contribute to workplace discrimination and those designed to eliminate discrimination. Explores effects of job discrimination and occupational segregation. Analyzes Title VII, ADA, and related topics in relation to broader strategies for addressing discrimination.

Cr. 3.

LSTU L220 - Grievance Representation

Union representation in the workplace. The use of grievance procedures to address problems and administer the collective bargaining agreement. Identification, research, presentation, and writing of grievance cases. Analysis of relevant labor law and the logic applied by arbitrators to grievance decisions.

Cr. 3.

LSTU L230 - Labor and the Economy

Analysis of the political economy of labor and the role of organized labor within it. Emphasis on the effects on workers, unions, and collective bargaining of unemployment investment policy, and changes in technology and corporate structure. Patterns of union political and bargaining response.

Cr. 3.

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

LSTU L250 - Collective Bargaining

The development and organization of collective bargaining in the United States. Union preparation for negotiations, bargaining patterns and practices, strategy and tactics; economic and legal considerations.

Cr. 3.

LSTU L251 - Collective Bargaining Laboratory

Designed to provide collective bargaining simulations and other participatory experiences in conjunction with L250.

Preparation for Course

P: or C: L250.

Cr. 1-3.

LSTU L255 - Unions in State and Local Government

Union organization and representation of state and municipal government employees, including patterns in union structure, collective bargaining, grievance representation, and applicable law.

Cr. 3.

LSTU L260 - Leadership and Representation

Organizational leadership issues for the union, community, and other advocate organizations. Analyzes leadership styles, membership recruitment, and leadership development. Examines the role of leaders in internal governance and external affairs including committee building, delegation, negotiations, and coalition building.

Cr. 3.

LSTU L270 - Union Government and Organization

An analysis of the growth, composition, structure, behavior, and governmental processes of U.S. labor organizations, from the local to national federation level. Consideration is given to the influence on unions of industrial and political environments, to organizational behavior in different types of unions, and to problems in union democracy.

Cr. 3.

LSTU L280 - Union Organizing

Explores various approaches and problems in private and public sector organizing. Traditional approaches are evaluated in light of structural changes in labor markets and workforce demographics. Topics range from targeting and assessments to committee building and leadership development.

Cr. 3.

Required Areas of Learning for Labor Studies

Arts and Humanities

- Afro-American Studies

- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Theatre
- Visual Arts

Sciences and Mathematics

- Anthropology (B200 and E445 only)
- Astronomy
- Biology
- Chemistry (except 100)
- Computer Science (includes BUS K200, K211, K212, K213, K214, K215, K216)
- Economics (E270 only)
- Entomology
- Forestry and Natural Resources
- Geography (G107 and G304 only)
- Geology
- Horticulture
- Mathematics (except 101, 102, 103, 109, 111, and 113)
- Physics
- Psychology (120, 201, 314, 333, 329, and 416 only)
- Sociology (S351 only)
- SPEA (K300 only)
- Statistics

Social and Behavior Sciences

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA (J101 only)
- WOST (W210 only)

Additional credits in labor-studies courses Credits: 12

Arts and Humanities Area of Learning (12 credits)

- Credits in a second writing course Credits: 3
- Credits from at least two different subjects Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Social and Behavioral Sciences Area of Learning Credits: 9

Credits, including one economics course (ECON E201 is recommended); courses in this area must be selected from at least two different subjects

Science and Mathematics Area of Learning Credits: 6

Credits, including one course in computer science (recommended). Science and mathematics courses must be selected from at least two different subjects

Electives Credits: 6

Note

You must earn a minimum of 10 credits after admission to labor studies and may apply toward the degree no more than 15 credits in a single subject other than labor studies. You must complete at least 12 credits while enrolled as an IU student.

Total Credits: 60

Mathematics Concentration (A.A.)

Program Offered: Concentration A.A.

Department of Mathematical Sciences

College of Arts and Sciences

The student learning outcomes for the degree are as follows:

- Students who complete the Associate of Arts Degree in Mathematics should be able to reason mathematically and should be good problem solvers.
- Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g. physics, engineering and business.
- Students who complete the degree should be prepared to complete a Bachelor of Science Degree in Mathematics in two years with a full-time course load.

The requirement of a Quantitative Reasoning course in IPFW General Education Area I is satisfied by the courses below. If you plan to continue for a bachelor's degree with a major in mathematics or mathematics teaching, see Part 5 for B.S. requirements.

Program Requirements

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

One of the following Credits: 3

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Mechanical Engineering Technology (A.S.)

Program: A.S.

**Department of Manufacturing and Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
- An ability apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.

- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of mechanical systems, mechanical components or manufacturing processes. An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems in mechanical engineering and engineering technology. An ability to communicate effectively.
- A recognition of the need for, and an ability to engage in lifelong learning. An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity contemporary societal and global issues.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, problem-solving ability, and hands-on skills to enter careers in installation, manufacturing, testing, evaluation, computer-aided design, or maintenance of basic mechanical systems. Graduates will be prepared for both immediate employment and continuation in the B.S. program.

To earn the A.S. with a major in mechanical engineering technology, you must fulfill the requirements of IPFW (see Part 8) and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites.

- technical expertise in engineering materials, applied mechanics, and applied fluid sciences.
- technical expertise in manufacturing processes, mechanical design, and computer-aided engineering graphics with added technical depth in computer-aided engineering graphics.
- expertise in applied physics having emphasis in applied mechanics plus fundamentals of electricity in physics.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

All courses require a grade of C or better.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Area II—Natural and Physical Sciences

All courses require a grade of C or better.

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society

All courses require a grade of C or better.

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses

All courses require a grade of C or better.

ETCS 101 - Introduction to Engineering, Technology, and Computer Science

Introduction to the professions of engineering, engineering technology, and computer science. Focus is on academic, career, and professional development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 104 - Technical Graphics Communications

An introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multiview drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.

Preparation for Course

C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 106 - Analytical and Computational Tools in MET

Introduction to analytical and computational problem-solving techniques. The electronic calculator, the factor-label method of unit conversions, engineering graphs, and the computer are used to solve problems. Computer emphasis is on spreadsheet analysis, graphics, and generation of technical reports through the integrated use of software packages.

Cr. 2.

Hours

Class 1, Lab. 2,

MET 180 - Materials and Processes

Application and characteristics, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

Preparation for Course

P: 106; C: MA 159 or 153.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 216 - Machine Elements

The design and analysis of machine components with emphasis on safety factors based on various failure theories in consideration of fluctuating loads, stress concentration, and other factors affecting failure. A study of standard machine elements such as brakes, clutches, belts, chains, gears, screws, springs, and bearings; their application, operational behavior, efficiency, economy, and standardization.

Preparation for Course

P: 202, 223, CS 114, STAT 301; C: 335.

Cr. 4.

Hours

Class 4,

MET 223 - Introduction to Computer- Aided Modeling and Design

An introduction to computer-aided modeling and design (CAMD) with hands-on experience in the operation of an interactive computer graphics system. Generation of 3-D computer models and preparation of working drawings including geometric dimensioning and tolerancing.

Preparation for Course

P: 104, 106.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 330 - Introduction to Fluid Power

A study of the development, transmission, and utilization of power through fluid power circuits and controls.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 335 - Basic Machining

A comprehensive survey of machine tools as they are used in converting workpieces into finished products with consideration of cost, quality, quantity, and interchangeability and safety requirements. Actual operation analysis of many machine tools set-ups will be provided for comparison studies.

Preparation for Course

P: 104, 180, PHYS 218.

Cr. 3.

Hours

Class 2, Lab. 3,

Additional Required Technical Courses

All courses require a grade of C or better.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required Support Courses

All courses require a grade of C or better.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 63

Organizational Leadership and Supervision (A.S.)

Program: A.S.

Division of Organizational Leadership and Supervision

College of Engineering, Technology, and Computer Science

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student-learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems, and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group, and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will show an awareness of the cultural context of organizations and demonstrate their ability to work with diverse others.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will demonstrate effective oral and written communication skills.
- Students will be able to manage their environment by planning for and using current technology, tools, and processes.

This program helps you prepare for leadership positions or for advancement in a wide variety of organizations. The A.S. with a major in organizational leadership and supervision is of particular benefit to individuals who already possess technical skills and work experience and to students who complete the program along with a bachelor's degree in a technical or behavioral-science area.

To earn the A.S. with a major in organizational leadership and supervision, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science, Division of Organizational Leadership and Supervision (see Part 4); earn a grade of C or better in ENG W131, ENG W233, and each OLS course; and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

OLS Core Classes

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS Electives Credits: 6

See the OLS advisor for a list of approved OLS electives.

Technical Support Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

Unrestricted Elective Courses Credits: 6

Total Credits: 63

Special Academic Regulations for Organizational Leadership and Supervision Degree Programs

Transfer students and students planning to change their major to organizational leadership and supervision must have a GPA of 2.00 or higher to be admitted into the program. A cumulative GPA of 2.0 or above is also required to remain in the division.

OLS, business, and technical courses taken more than 10 years ago will not count towards your degree requirements.

Students receiving credit for cooperative education experience can use these credits as unrestricted electives only.

If you have not registered for degree-applicable courses as an IPFW OLS major for four consecutive semesters (excluding summer), you must satisfy the degree requirements specified in the IPFW Bulletin that includes your year of re-entry.

Political Science Concentration (A.A.)

Program: Concentration A.A.
Department of Political Science
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- To have a basic knowledge of the discipline in political science.
- To have basic analytical skills as well as the writing skills necessary to communicate ideas.
- To be exposed to sufficient materials so that students can decide whether or not they want to pursue a BA degree in political science.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total Credits: 60-63 (with a graduation GPA of at least 2.0)

Concentration Requirements

In addition to the courses listed below, you must complete MA 153 or MA 168 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in political science (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Additional credits in political science Cr: 6

Additional credits in political science, 200 level or above Cr: 6

Psychology Concentration (A.A.)**Program: Concentration A.A.****Department of Psychology****College of Arts and Sciences**

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate basic knowledge in introductory, child, social and abnormal psychology.
- Students will demonstrate the ability to make a decision as to whether they wish to obtain a BA degree in psychology.

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 as your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in psychology (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

General Education Requirements**MA 153 - Algebra and Trigonometry I**

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Program Requirements

- Additional credits in psychology, 200 level or above Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Two of the following Credits: 6**PSY 201 - Introduction to Statistics in Psychology**

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Two of the following Credits: 6**PSY 235 - Child Psychology**

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 and PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 and PSY 369

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Radiography (A.S.)

Program: A.S.R.

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/radiography/

The student learning outcomes for the degree are as follows:

- Demonstrate clinical procedural proficiency and radiation safety.
- Demonstrate age specific radiographic patient care.
- Evaluate the quality of radiographic images.
- Demonstrate logical film sequence for non-routine situations.
- Demonstrate effective interpersonal communication with patients and other healthcare staff.
- Demonstrate effective written communication in patient records.
- Demonstrate broad knowledge of the scientific principles that define radiographic practice.

The IPFW Radiography Program is offered in affiliation with the Fort Wayne School of Radiography (FWSR). The FWSR is cosponsored by Parkview Hospital and St. Joseph Hospital and is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT), 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182; Phone: (312) 704-5300; Fax: (312) 704-5304; www.jrcert.org.

The Radiography Program curriculum includes general education prerequisite courses provided by IPFW and professional education courses provided by the FWSR. Students are designated as preradiography majors prior to admission to the FWSR. University prerequisite courses may be completed by preradiography students under the advisement of the College of Health and Human Services at IPFW. The professional education curriculum is a structured, full-time, 24-month program beginning Summer Semester II each year. Professional education is a combination of classroom instruction and clinical experience. The clinical experience is conducted in the radiology departments of St. Joseph Hospital, Parkview Hospital, Parkview North Hospital, and Dupont Hospital in addition to Fort Wayne Orthopaedics and Fort Wayne Orthopaedics Dupont facilities.

Application to FWSR - Application materials are obtained from the FWSR by request:

Fort Wayne School of Radiography
700 Broadway
Fort Wayne, Indiana 46802
Phone: (260) 425-3990
Fax: (260) 425-3887
Email: duncanc@ipfw.edu

Admission Criteria - Admission to the FWSR from preradiography status is limited and competitive, based on a total composite score of the following:

- Preradiography curriculum GPA
- References
- FWSR preadmission testing
- Personal interview

Completion of preradiography course work alone does not ensure admission.

Application Requirements - Applicants seeking admission to the FWSR must meet the following requirements to sit for the preadmission test:

Complete at least 7 credit hours of the preradiography curriculum with a minimum 2.7 preradiography curriculum grade point average. Preradiography curriculum is:

- MA 153
- PSY 120
- ENG W131
- BIOL 203
- BIOL 204
- ETCS 106
- COM 114 or COM 212

Applicants may complete the equivalents of these courses at other colleges and universities. A student may make two graded attempts at a prerequisite course, with the most recent grade calculated in preradiography curriculum GPA. The student's two attempts will include any graded attempt, whether or not eliminated from the student's cumulative GPA by grade replacement.

For the purpose of selecting candidates to the radiography program, FWSR will allow an applicant to petition to the program's admissions committee for a fresh start. A fresh start allows removal of a defined portion of the applicant's early academic history from calculation of admission grade point average. Please contact the preradiography Academic Advisor or the FWSR for more information about the Fresh Start policy.

- Earn a grade of C- or better in all preradiography curriculum course work.
- Complete BIOL 203, BIOL 204, and MA 153 courses within 5 years of the desired start date of the FWSR professional program.
- Submit an application, application fee, official high school transcript, official college transcripts (one from each post-secondary institution attended) and references directly to the FWSR, postmarked by March 1 for desired admission in the immediately following Summer Semester II. Reference forms are included in the application materials.

Preradiography curriculum course work and grades from all post-secondary institutions attended will be reviewed and evaluated. Equivalents to preadmission testing requirements will be evaluated on an individual basis.

Preadmission Test - Applicants meeting the preceding criteria will be scheduled for preadmission testing.

Personal Interview - Individuals who meet the minimum preadmission testing score will be contacted to arrange a personal interview. A personal interview is required before a final selection is made.

Admittance to the FWSR - In order to be admitted to the FWSR, applicants must complete all preradiography curriculum course work by the end of spring semester with a grade of C- or better in each course and maintain a minimum 2.7 preradiography curriculum grade point average.

Acceptance into the Radiography Program is contingent on an applicant's ability to meet the following additional requirements:

- Demonstrate meeting the College of Health and Human Services Technical Standards.
- Complete a Background Check.
- Submit a Driving Record.
- Submit military discharge papers, if applicable.
- Pass a Drug Screening Test.
- Complete a Physical Examination and submit a Health Record with documentation of required immunizations.
- Submit proof of Professional Liability Insurance.
- Obtain an Indiana State Board of Health Radiology Permit.

* Upon acceptance into the Radiography Program, students will be provided with the forms and information necessary to complete the above listed additional requirements. Expenses incurred in meeting the above listed additional requirements are the responsibility of the applicant.

At IPFW you may complete the following courses: (23 credits)

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following:

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Professional Education Program: (60 credits)

AHLT R100 - Orientation to Radiologic Technology

Introduction to the field of radiology and its history. Students learn proper ethical standards, become acquainted with the duties and responsibilities in personal care for the patient, and investigate radiation protection for the patient and personnel. Degree credit will not be given for both R100 and R104.

Preparation for Course

C: AHLT R101, R102, R181.

Cr. 2.

AHLT R101 - Radiographic Procedures I

Concepts in radiography with emphasis on the radiographic procedures used to demonstrate the skeletal system.

Preparation for Course

C: AHLT R100, R102, R104, R181.

Cr. 3-4.

IPFW course is 4 credit hours.

AHLT R102 - Principles of Radiography I

Basic concepts of radiation, its production, and its interactions with matter. Includes the production of the radiographic image and film processing.

Preparation for Course

C: AHLT R101, R181, Math 153.

Cr. 3.

AHLT R181 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

C: AHLT R100.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R182 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

reached.

Preparation for Course

P: AHLT R101, R181.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

AHLT R200 - Pathology

A survey of the changes that occur in the diseased state to include general concepts of disease, causes of disease, clinical symptoms and treatment, and diseases that affect specific body systems.

Preparation for Course

P: anatomy/physiology.

Cr. 2-3.

IPFW course is 3 credit hours.

AHLT R201 - Radiographic Procedures II

Concepts in radiography with emphasis on radiographic procedures used to demonstrate the skull and those requiring the use of contrast media.

Preparation for Course

C: AHLT R101, R182, R202.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-3.

IPFW course is 4 credit hours.

AHLT R202 - Principles of Radiography II

Continuation of R102 with emphasis on the properties that affect the quality of radiographic image.

Preparation for Course

C: AHLT R102, R181, R201.

Cr. 3.

AHLT R205 - Radiographic Procedures III

Concepts in radiography with emphasis on special radiographic procedures and related imaging modalities.

Preparation for Course

C: AHLT R201, R222.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-3.

IPFW course is 4 credit hours.

AHLT R222 - Principles of Radiography III

Continuation of R202 with emphasis on the application of radiography principles of imaging equipment.

Preparation for Course

P: AHLT R202.

Cr. 3.

AHLT R250 - Physics Applied to Radiology

Fundamentals of radiation physics, X-ray generation, and equipment quality control.

Preparation for Course

P: MA 153.

Cr. 2-4.

IPFW course is 2 credit hours.

AHLT R260 - Radiation Biology and Protection in Diagnostic Radiology

Study of the biological effects of ionizing radiation and the standards and methods of protection. Emphasis is placed on X-ray interactions. Also included are discussions on radiation exposure standards and radiation monitoring.

Preparation for Course

P: AHLT R250.

Cr. 1-3.

IPFW course is 2 credit hours.

AHLT R281 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 6 credit hours.

AHLT R282 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R283 - Clinical Experience in Radiography

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology, under the direct supervision of a registered technologist until mastery of clinical objectives is reached.

Preparation for Course

P: AHLT R182, R201.

Cr. 1-6.

Variable Title

(V.T.)

IPFW course is 5 credit hours.

AHLT R290 - Comprehensive Experience

Clinical application of radiographic positioning, exposure techniques, and departmental procedures in all phases of radiologic technology under the direct supervision of a registered technologist. Successful completion involves mastery of all clinical aspects of the program.

Preparation for Course

P: AHLT R281, R282, R283.

Cr. 1-8.

IPFW course is 3 credit hours.

Total Credits: 83

Spanish Concentration (A.A.)

Program: Concentration A.A.

Department of International Language and Culture Studies

College of Arts and Sciences

The student learning outcomes for the degree are as follows:

- Acquire a basic foundation in language skills and a solid basis for further study in the language.
- Demonstrate the ability to examine stereotypes and to respond in culturally appropriate ways in everyday situations in the target culture.
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity.

The college's Associate of Arts program serves as an intermediate step toward completion of a baccalaureate degree. The requirements encompass approximately the first half of the bachelor's degree program offered by the sponsoring department. See Part 5 for complete requirements for related bachelor's degree.

Requirements for the Associate of Arts

Credits in IPFW General Education Area I:(9)

- COM 114 Fundamentals of Speech Communication
- ENG W131 Elementary Composition I (or equivalent), with a grade of C or higher
- Quantitative Reasoning course (except MA 101), with a grade of C or higher
- Credits in IPFW General Education Area II, including one science course with a scheduled laboratory Credits: 6
- Credits in IPFW General Education Area III Credits: 6
- Credits in IPFW General Education Area IV Credits: 6
- Credits in the first year of a foreign language Credits: 8
- Credits in a concentration with a grade of C or higher in each course (see below) Credits: 15–21
- Additional credits in approved elective courses Credits: 4–12

Total with a graduation GPA of at least 2.00 Credits: 60–63

Concentration Requirements

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning; ANTH L200 or LING L103 is recommended as a selection from IPFW General Education Area III. If you plan to continue for a bachelor's degree with a major in Spanish, see Part 5 for B.A. requirements.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

One of the following Credits: 3

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

One of the following Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

Women's Studies Concentration (A.A.)

Program: Concentration A.A.

College of Arts and Sciences

Classroom-Medical Building 272 ~ 260-481-6711 ~ www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- Demonstrate basic understanding of major issues in feminism.
- Demonstrate basic awareness of ways in which feminist scholarship has affected the subject matter of at least two arts and Sciences disciplines.
- Have the education tools for pursuing the bachelor of arts in Women's Studies.

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and

analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

In addition to the courses listed below, you must complete MA 153, MA 168, or STAT 125 for your IPFW General Education course in Quantitative Reasoning. If you plan to continue for a bachelor's degree with a major in women's studies (see Part 5), you should take the second-year foreign-language courses as electives for the A.A.

Program Requirements

- Credits in WOST or cross-listed humanities/visual arts Credits: 3
- Credits in WOST or cross-listed social science/science Credits: 3
- Additional credits in WOST or cross-listed courses Credits: 6

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Baccalaureate

These programs are offered by Indiana University.

Anthropology (B.A.)

Program: B.A

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

The student learning outcomes for the degree are as follows:

- Achieve familiarity with different cultures in at least two regions of the world
- Know the major anthropological approaches to understanding the human condition
- Be able to explain societies in a holistic manner
- Achieve competency in writing
- Demonstrate critical thinking
- Acquire quantitative skills for analysis

- Demonstrate a willingness to engage learning and scholarship as a life-long endeavor

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

To earn the B.A. with a major in anthropology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences

See Part 2 General Education Requirements for approved courses

- Additional credits in Area II: 3

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in ANTH) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Additional credits in anthropology courses, including two courses selected from Group A courses and two courses selected from Group B courses, below Credits: 15

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH H445 - History and Theory of Anthropology

An examination of the historical development of the field of anthropology concentrating upon the intellectual roots and context that surrounded its emergence as well as contemporary problems, perspectives, methods, and theories. Course designed for graduating anthropology majors.

Preparation for Course

P: ANTH E105 and B200.

Cr. 3.

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

Group A Regional Ethnography

ANTH E301 - Plain People of Indiana

Introduction to two representative groups of Plain People: Old Order (house) Amish and Old German Baptist Brethren. Topics include their beliefs and practices, societal structure, sense of community (in language, dress, architecture, transportation, schooling, demography), and the special problems that beset them as traditional societies in a technocratic age.

Cr. 3.

ANTH E310 - Introduction to the Cultures of Africa

Explores the vitality and diversity of African cultures today in communities ranging from town neighborhoods to remote villages and from desert to rainforest. Demonstrates the tenacity and creativity of human societies facing severe political, social, and ecological pressures, but also contributes new questions and answers to global debates about family values, ethnicity, terrorism, hunger, and economic growth.

Cr. 3.

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E341 - Culture of China

Survey of Chinese culture and society. Geography, history, linguistic and ethnic groups, social and political organizations, education, religion, etc.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E350 - European Ethnography

European peoples and cultures. Emphasis on comparison of cultural assumption and social organization of selected European cultures; techniques for anthropological research in European societies.

Preparation for Course

P: ANTH E105 or consent of instructor.

Cr. 3.

ANTH E479 - Indian Cultures of Peru

Detailed examination of past and present of one of the largest Indian populations in Latin America. Emphasis on the role of Indians in contemporary society.

Preparation for Course

P: consent of instructor.

Cr. 3.

Group B Topics in Anthropology

ANTH A495 - Individual Readings in Anthropology

Preparation for Course

P: consent of instructor.

Cr. 1-4.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

ANTH A496 - Field Study in Anthropology

Planning of research project during year preceding summer in field. Time spent in research must amount to at least one week for each credit hour granted. Research paper must be presented by end of semester following field study.

Preparation for Course

P: consent of instructor and department chair.

Cr. 3-8.

Notes

Maximum of 8 credits.

ANTH E102 - Anthropology of America

Anthropological analysis of American society: marriage, descent, kinship organization, religion, social stratification, and economic basis of social structure.

Cr. 3.

ANTH E400 - Undergraduate Seminar

Intensive examination of selected topics in anthropology. Emphasis upon analytic investigation and critical discussion.

Preparation for Course

P: ANTH E105.

Cr. 3.

Variable Title

(V.T.)

ANTH E401 - Ecology and Culture

How human beings, nature, and culture interrelate. Examination of the varied approaches used in hunting, agricultural, and industrial societies for adapting to the physical environment.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E402 - Gender in Cross-Cultural Perspective

This course considers the meaning and social implications of gender in human society. Cultural definitions of "male" and "female" gender categories as well as associated behavioral and structural differentiation of gender roles will be analyzed using current anthropological concepts and theories.

Cr. 3.

ANTH E405 - Principles of Social Organization

Comparative analysis of the social organization of selected societies from the perspectives of major theoretical positions in anthropology.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the non-Western culture studies requirement.

Eligible for graduate credit.

ANTH E406 - Anthropology and Documentary Films

Comparative analysis of historical and social contexts. Discussion of points of view and aims of individual filmmakers.

Cr. 3.

ANTH E420 - Economic Anthropology

Comparative study of technologies and economic systems of selected non-Western peoples.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E421 - The Anthropology of Aging

This course explores age and the aging process cross-culturally by looking at the specific cultural context in which individuals age and by analyzing similarities and differences across cultures.

Cr. 3.

ANTH E445 - Medical Anthropology

An examination of the cross-cultural properties of disease and curing. Focus on investigations into the ideology and meaning of illness, the relationship between patient and healer, and how responsibility for illness is assigned. Medical anthropology is concerned with knowledge about sociocultural contexts of disease and healing and with how such knowledge might inform the management of our own health problems.

Cr. 3.

Session Indicators

(spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E455 - Anthropology of Religion

Critical evaluation of current approaches to the analysis of religious myth, ritual, and symbolism. Problems in understanding religious beliefs of other cultures. Modern development of the anthropology of religion.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E462 - Anthropological Folklore

Function, forms, and interpretations of folklore in traditional societies. Folklore as an expression of continuity and change.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

ANTH E470 - Psychological Anthropology

The similarity and diversity of human personalities. How culture forms personalities and is formed by them. Focus on individual variation within a cultural framework.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH P220 - Rise and Fall of Ancient Civilizations

Focus on how societies develop from band and tribal level to state-level social organization. Special emphasis on the continuing evolution of the state.

Preparation for Course

P: ANTH P200.

Cr. 3.

ANTH P300 - Topics in Prehistory

World archaeology in the framework of major cultural stages. The methods, analysis, and significance of archaeological research.

Cr. 3.

ANTH P360 - Archaeology of North America

Introduction to antiquity of the American Indian, principal culture areas, and field methods and techniques incident to recovery of archaeological data and materials.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

ANTH P361 - Prehistory of Eastern North America

Survey of prehistoric cultural developments in eastern North America from man's first occupation of this area until European contact, set primarily within the framework of changing ecological adaptations.

Preparation for Course

P: ANTH P200 or P360 and consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P376 - Archaeology of Death

Examination of mortuary behavior using archaeological and biological data. Methods of studying variation in mortuary practices. Identification of skeletal remains in laboratory setting.

Preparation for Course

P: ANTH P200.

Cr. 3.

ANTH P382 - Archaeological Research Design

Construction and implementation of archaeological research design using a graphics-oriented computer simulation model. Computer displays sites, features, and artifacts located by student using various methods of survey and excavation. Hypothesis testing, sampling strategies, and budget constraints are emphasized.

Cr. 3.

ANTH P399 - Undergraduate Seminar

Intensive examination of selected topics in archaeology. Development of skills in analysis and criticism. Topic varies.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated once for credit.

ANTH P400 - Archaeological Methods and Techniques

Methods and mechanics of archaeology in field and laboratory. Use of survey instruments, drawing tools, and photographic equipment, treatment of recovered materials leading to printed report.

Preparation for Course

P: consent of instructor.

Cr. 2-4.

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

ANTH P405 - Fieldwork in Archaeology

Archaeological work directed toward field techniques: excavation and preservation of materials, surveying, photography, cataloguing.

Cr. 1-8.

Notes

One credit hour per full week of fieldwork.

Dual Level Course

Eligible for graduate credit. Maximum of 8 credits.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Art Education (B.A.)

Program: B.A. Art Education(All-Grade Education Program)

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/

The student learning outcomes for the degree are as follows:

- The Bachelor of Art in Art Education degree prepares the student to teach elementary, middle school, and junior high/senior high art.
- The Bachelor of Arts in Art Education program at IPFW promotes and cultivates the role of artist/teacher as the ideal educator of the arts in schools today. With a solid background in studio arts, student teachers use their experience as artists to develop a philosophy that aims to create authentic art making conditions in their

future positions as art educators. Art educators learn to advocate for the arts and are given learning opportunities both in school and museum contexts as they grow to share learning and understanding of visual arts education.

The Bachelor of Art in Art Education degree is divided into three parts; 36 credit hours of General Education, 54 credit hours of art history and art studio courses, and 38 credit hours of Professional Education classes. A 3.00 GPA in the Content Field (art history and art studio) and a 2.5 cumulative GPA is required for this degree. A cumulative GPA of 2.5 from coursework taken from previous institutions or in IPFW Professional Education classes needs to be recorded. In addition each Area of General Education must maintain a 2.0 GPA. A total of 128 credits is required for graduation.

Components:	Credits
I. General Education	36
II. Content Field	54
III. Professional Education	38
Total	128

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(grade of B or higher)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or higher)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the Following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences

One class in: Astronomy, Chemistry, Geology, Physics, or Bioanthropology Credits: 3.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

Area III—The Individual, Culture, and Society

One of the following Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- FINA courses can not be used.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- VCD or FINA courses can not be used.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Class must be attained at IPFW.

College of Visual and Performing Arts Requirements Credits: 54

II. Content Area

Art History Requirements Credits: 6

FINA H111 and H112 should be taken just prior to Praxis II testing (see Professional Teaching Requirements).

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

100 Level Foundations Requirements Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

(P121 is a prerequisite to P122)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio will consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level Fundamentals studio classes. Some students may be asked to re-take particular Foundation classes to attain department standards.

200 Level Studio Requirements Credits: 21

200 Level courses do not have to be taken in this order.

FINA P223 - Figure Drawing I

Introduction to drawing the human figure using various media and techniques. Basic anatomy; the skeletal and muscular structure of the human figure as related to drawing is included.

Cr. 3.

FINA P225 - Painting Fundamentals I

Introduction to painting methods and media and the further application of basic principles of composition through varied pictorial problems from still life, landscape, memory, and imagination.

Cr. 3.

FINA P231 - Sculpture Fundamentals

Student will work in a wide variety of sculptural mediums. Assignments will focus on idea-based expression as well as a thorough introduction to different tools and processes of sculptural construction. Projects will allow student expression within a guideline that explores natural and abstract images.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P233 - Metalsmithing Fundamentals

Understanding of the possibilities of the materials and an appreciation of the use of the tools essential for the creation of forms and objects in metal. Basic techniques, raising, planishing, casting, forging, and fabrication are taught. Inventiveness within the discipline imposed by this traditional art form is encouraged.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P235 - Ceramics Fundamentals

Fundamental techniques of forming by hand-building methods, glazing and firing clay objects. Introduction to the creative possibilities of this craft through projects in tile, pottery form, and sculpture. Emphasis on self-expression through good design and understanding the medium.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P241 - Printmaking Fundamentals

Study of materials, tools, processes in the various methods of printmaking (block printing, lithography, and intaglio) as they are used for contemporary graphic concerns.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

B.A. in Art Education Portfolio Review

Each student must submit a portfolio of 200 level work to attain formal acceptance into the B.A. in Art Education program. The portfolio review must be passed and recorded before students will be allowed to enter the Block 1 Teacher Education block of classes. Students presenting a portfolio for acceptance into the B.A. in Art Education program can declare an area of studio concentration, i.e. painting, sculpture, or can decide to take a variety of advanced studio classes. The portfolio should consist of 15-20 works, with at least two works from each 200 level Fundamentals course. It is highly recommended that students seek faculty advice on which works to submit for review. Faculty evaluations will be based on a student's strong knowledge and skills in:

- showing competence in representational drawing of volume, pictorial space, and the depiction of the human figure. An understanding of linear perspective should be evident.
- the ability to compose aesthetic element of line, tone/value, shape, texture, color, and 3D form in space.
- demonstrating technical and aesthetic excellence (for the 60 credit level) in your chosen major; i.e. drawing, ceramics, metalsmithing, painting, printmaking, or sculpture.
- (for 2D majors) drawing, painting, printmaking as well as the demonstration of competence and serious investigation in 3D media.
- (for 3D majors) ceramics, metalsmithing, and sculpture with competence and serious investigation in 2D media.

B.A. in Art Education Portfolio Review Outcome

A student applying for acceptance in the B.A. in Art Education program may be accepted, deferred, or denied. A student's acceptance into the B.A. in Art Education will allow them to advance into 300 level studio classes as a B.A in Art Education major. A deferred student will be asked to re-submit their portfolio for consideration after re-taking requested classes. A student denied entry into the B.A. in Art Education program may wish to consider the B.A. program or apply once again for entry into the B.A. in Art Education program with permission from the department.

Advanced Studio Courses Credits: 15

300/400 Studio

- Five (5) advanced 300/400 studio courses need to be fulfilled in this area.
- 300 level classes must be taken prior to 400 level classes
- Two (2) Department of Visual Communications and Design (VCD) courses can be taken in this area.

Professional Education Requirements Credits: 38

Initial Requirement Block Credits: 4

Block should be completed within the sophomore year.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

Education Portfolio Checkpoint

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0 (field experience required)

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Admission to the TEP is required for remaining courses.

PPST Testing

PPST (Pre-Professional Skills Test)

Test results must be turned into Department of Fine Arts secretary prior to registering for Block 1 Teacher Education classes. Initial Requirement Block and all areas of the PPST must be completed, passed, and recorded prior to registration into Block 1 Teacher Education. The Department of Fine Arts 200 Level Portfolio Review must also be passed before entering Teacher Education Block 1. The IPFW School of Education has information about PPST study guides and testing schedules.

Block 1: Teacher Education Requirements Credits: 12

Block 1 must be completed before entering Block 2.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M330 - Foundations of Art Education and Methods I

Students develop a philosophy of art education while they explore the relationship between theory and practice in art education. Museum and public school participation required.

Cr. 3

(Methods I must be taken before Methods II) (requires field experience)

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3 (requires field experience)

Education Portfolio Checkpoint

Block 2: Professional Education Credits: 9**EDUC M430 - Foundations of Art Education and Methods II**

The unique role of artist/educator as phenomenological examined both on a theoretical and practical level. Attention to curriculum development. Public school utilized for extension of class experience.

Cr. 3

(field experience required)

Education Portfolio Checkpoint

EDUC P254 - Educational Psychology for Teachers of All Grades

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3 (field experience required)

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Praxis II (Art Education Exam)

Praxis II must be passed and recorded prior to applying for a teaching license. Art History H111 and H112 (see above) should be taken just prior to Praxis II testing.

Student Teaching Credits: 13

- 10 week plus 6 week combination.
- Student must complete an application for student teaching one year before intended student teaching semester.

EDUC M482 - Student Teaching: All Grades

Full-time supervised student teaching in music at the elementary, junior high/middle school, and/or high school level in an accredited school within Indiana.

Cr. 1-16.

Notes

Additional fee.

Credits: 13

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Final Education Portfolio Checkpoint

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Fine Arts faculty. For a review of transferred studio credit, the student should provide the viewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

Biology (B.S.)

Program: B.S.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

Provide coursework, research experience, and advising for students who seek employment after the B.S. degree or who expect to enter graduate and professional schools.

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply those theories and principles to problem solving.
- Students should have demonstrated knowledge of the scientific method, and should be able to apply that knowledge to problem solving. Students should also have the ability to critically evaluate biological information.
- Students should have demonstrated the basic knowledge and experience of field and laboratory work and be able to communicate the results of an investigation.

Special Regulation for Biology Majors

Time Limit - All biology courses applied toward graduation must be completed within 10 years from the time the first biology course was completed.

To earn a B.S. with a major in biology, you must fulfill the requirements of IPFW and of the College of Arts and Sciences (see Part 4 and Part 8); earn a GPA of 2.30 or higher in BIOL 117, 119, 217, 218, 219, and 491 and in A/B-elective courses in biology (listed below); and complete the following courses:

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Or

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

(credits included in Biology Core, below)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid

and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Supporting Courses, below)

Area III—The Individual, Culture, and Society (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

(credits included in Supporting Courses, below)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the

trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

BIOL 491 - Senior Biology Seminar

Students critique and discuss seminar presentations. Each student must select a topic and give an oral presentation on it. Open only to senior biology majors.

Cr. 1.

Session Indicators

(fall, spring)

Supporting Courses**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

One of the following sequences Credits: 8

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Or Select:

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

And

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Calculus and Statistics

The following calculus and statistics course pattern is typical. Course substitutions are possible with advisor approval. Please note that most graduate programs require a full year of calculus.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

One of the following sequences Credits: 8–10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

General Elective Courses (Credits: 16)

In the interest of broadly training our majors, students are required to take at least one course *with laboratory* from each of the A and B elective course lists below. The A elective courses focus on topics regarding the intact organism and its interaction with the environment, and so are organismal, population, community, and ecosystem in nature. The B elective courses focus on processes acting within the organism, and thus detail molecular, cellular, and organ-system mechanisms.

A-Electives

(organismal, population, community, and ecosystem)

BIOL 335 - Animal Behavior

Instinct vs. learning; genetics and development of learning; neurobiology; behavioral ecology: habitat selection, mating systems, foraging behavior; sociobiology and human behavior.

Preparation for Course

P: BIOL 117, 119, or equivalent.

Cr. 3.

separate laboratory available (BIOL 336)

BIOL 336 - Animal Behavior Lab

Discussion of methods for collecting and assessing behavioral data; experiments examining learning, thermoregulation, foraging, and habitat use. Experiments will be conducted as group projects.

Preparation for Course

C: BIOL 335 or permission of instructor.

Cr. 1.

Hours

Lab. 3.

BIOL 345 - Vertebrate Biology

Vertebrate diversity and the manner in which species are designed for their particular lifestyles, the relatedness and origins of the major vertebrate taxa, the basic vertebrate body plan, adaptations for feeding and locomotion, natural history of selected vertebrates, current conservation issues regarding vertebrates. Field experiences will include two weekend day trips.

Preparation for Course

P: BIOL 117, 119.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 434 - Marine Community Ecology

Lecture involves a survey emphasizing tropical marine communities including coral reefs, mangrove estuaries, turtle grass, and hard and soft substrate intertidal communities. Community processes such as predation, competition, mutualism, zonation, and behavior are discussed as well as physical-chemical factors such as tides, currents, waves, and salinity. Course includes a required field trip to a marine biological station over spring break for the lab portion. Student required to pay for expenses associated with field trip. Prerequisite for field trip: swimming/snorkeling ability; use of scuba gear is optional.

Preparation for Course

P: one year of college biology; second semester may be taken concurrently.

Cr. 3.

Hours

Class 2, Lab. 1.

Session Indicators

(spring)

includes laboratory

BIOL 445 - Aquatic Biology

Introduction to the roles of physical and chemical factors, predation, and competition in determining the abundance of freshwater organisms and regulating the productivity of lake ecosystems. Laboratories emphasize field work and group or individual projects at the Crooked Lake Biological Station.

Preparation for Course

P: BIOL 117 and one year of general chemistry.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 501 - Field Botany

Field botany is the study of plants in a landscape context. Major course themes include plant identification; plant community analysis and classification, focusing on major plant community types in northeast Indiana; an introduction

to basic concepts of geology, hydrology, and soil science as they relate to the distribution and maintenance of plant communities, and a module on habitat preservation and restoration. The course includes two required Saturday field trips.

Preparation for Course

P: BIOL 217 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 502 - Conservation Biology

An investigation of the foundations of conservation biology and emergent topics within the field: conservation ethics, the Endangered Species Act, island biogeography, effective population size, minimum viable populations, edge effects, managing for threatened species, and refuge design.

Preparation for Course

P: BIOL 217 and 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 505 - Biology of Invertebrate Animals

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

Preparation for Course

P: Biol 109 or 117 and 119.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 520 - Contemporary Parasitology

This course is designed to provide students, in the various disciplines, with information on parasites that will augment their training to pursue more advanced areas in medicine, allied health, animal, and environmental sciences.

Preparation for Course

P: BIOL 217 and 219, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 543 - Population Ecology

Interactions that determine the dynamics, abundance, and persistence of natural populations. Topics include competition, predation and disease, metapopulations, computer simulation and data analysis, discussions of classical and current literature.

Preparation for Course

P: BIOL 217, 218, and 219; a statistics course is recommended.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 556 - Physiology I

General and comparative physiology. Principles of physiology. Nerve and muscle, temperature regulation, ion and water balance. The critical evaluation of original research papers.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 558)

BIOL 579 - Fate of Chemicals in the Environment

An investigation of the fate and transport of chemicals in the environment, including air, soil/sediment, and water. Special consideration will be given to the degradation of chemicals by microorganisms and to methods to maximize their activities (bioremediation).

Preparation for Course

P: BIOL 217 and a course in organic chemistry.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 580 - Evolution

A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within areas, as well as evidences for the possible mechanisms of evolutionary change.

Preparation for Course

P: BIOL 217 or equivalent.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 582 - Ecotoxicology

An investigation into the effects of environmental pollutants on ecosystem structure and function. The fate of pollutants in the environment is considered as it relates to the direct and indirect effects of chemicals on biota. Also considered are regulatory aspects of ecotoxicology.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 586 - Topics in Behavior and Ecology

In-depth examination of topics in ecology and behavior not treated extensively in other courses, e.g., behavioral ecology of reproduction, foraging ecology and behavior, and the behavioral ecology of defense against predators.

Preparation for Course

P: an ecology course or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated for credit with a different topic.

Dual Level Course

Undergraduate-Graduate

BIOL 592 - The Evolution of Behavior

An investigation of behaviors as adaptations: specializations of sensory and motor mechanisms involved in behavior, animal communication systems, behavioral ecology, patterns of behavior as solutions to ecological problems such as predator avoidance and resource exploitation. Emphasis will be on theoretical principles; examples will be broadly comparative.

Preparation for Course

P: BIOL 580 or equivalent or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 598 - Biology of Fish

A comprehensive study of fish biology that covers topics from physiology to ecology to fisheries management. Lectures include discussions of controversial issues and current research from primary literature. Additionally, the class will participate in several field collecting trips, sometimes in association with state fish biologists, and complete an independent student research project.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

separate laboratory available (ENTM 207)

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 505 - Molecular Ecology and Evolution

Lectures cover the genetic attributes of both conventional and contemporary molecular markers. Discussions focus primarily on the use of DNA-based markers to address conceptual issues in ecology and evolutionary biology (e. g.,

mating systems, systematics, phylogeography). Offered in odd-numbered years.

Preparation for Course

P: BIOL 218; one course in biochemistry is recommended. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

FNR 523 - Aquaculture

Historical perspectives and current practices in aquaculture, including production systems, feeds, water quality requirements, and diseases of commercially important species.

Preparation for Course

P: BIOL 217 and 219 or permission of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

B-Electives

(molecular, cellular, and organ-system)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

includes laboratory

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

includes laboratory

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

separate laboratory available (BIOL 382)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 506 - Human Molecular Genetics

A molecular characterization of the human genome, cloning human disease genes, the molecular basis of human genetic disorders that are due to biochemical defects and chromosomal abnormalities, molecular approaches in diagnosis of human disorders, mapping of human genes, and gene therapy.

Preparation for Course

P: BIOL 218; one semester of organic chemistry or biochemistry or signature of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 509 - Molecular Biology and Applications

Up-to-date recombinant DNA methods will be covered; how molecular biology methods have enhanced our understanding of basic biological functions and structures; the applicability of molecular biology in pharmaceuticals, vaccine production, agriculture, bioremediation, and synthesis of commercial products.

Preparation for Course

P: BIOL 218, and CHM 254 or CHM 533, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 584)

BIOL 515 - Molecular Genetics

A molecular approach to the problems of structure, duplication, mutation, and phenotypic expression of genetic material.

Preparation for Course

P: BIOL 218, 381, and one semester of organic chemistry.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 516 - Molecular Biology of Cancer

A detailed course examining the molecular mechanisms controlling the growth of animal cells. Emphasis will be placed on current experimental approaches to defining the molecular basis of growth regulation in developing systems and the uncontrolled proliferation of cells in metabolic disorders, such as cancer.

Preparation for Course

P: BIOL 218, 381 or graduate student standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 533 - Medical Microbiology

Host-parasite relationships, immunology, bacteria, and viruses associated with infectious diseases.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 540 - Biotechnology

Examines research, techniques, and applications for several technologies situated at currently recognized biological frontiers, including recombinant DNA technology, hybridoma technology, protein engineering, agricultural research, and microbiological engineering.

Preparation for Course

P: BIOL 217 and 381 or consent of instructor.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 544 - Principles of Virology

Introduction to the molecular biology of animal, plant, and bacterial viruses. Interaction of viruses and the host cell, viral replication, mechanisms of viral pathogenesis, immunology, chemotherapy, viral genetics, oncology, and vaccines.

Preparation for Course

P: BIOL 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 559 - Endocrinology

The study of hormone function. Consideration will be given to the role of hormones in growth, development, metabolism, homeostasis, and reproduction.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 565 - Immunobiology Lab

A survey course in laboratory experiments and demonstrations using classical immunological techniques and modern immunoassays with up-to-date technological equipment. The laboratory supplements the lecture portion of BIOL 537 but is not required. Typical assays include immuno-double diffusion Ouchterlony methodology, immunofluorescence identification of cell surface antigens, cytokine and mitogen stimulated proliferation of immune cells, ELISA assays, and PAGE with Western blotting.

Preparation for Course

P or C: BIOL 537.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 566 - Developmental Biology

Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches.

Preparation for Course

P: BIOL 218.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 567)

BIOL 567 - Laboratory in Developmental Biology

Descriptive and experimental study of the development of animals. Laboratories do not necessarily follow lecture material.

Preparation for Course

P or C: BIOL 566 or consent of instructor.

Cr. 1.

Hours

Lab. 2.

Dual Level Course

Undergraduate-Graduate

BIOL 584 - Molecular Biology and Applications Laboratory

A lab consisting of mini-projects that emphasize the applications of several molecular biological techniques, such as Southern blotting, DNA-DNA hybridization, purification and cloning of genes into plasmid vectors, genetic engineering and PCR amplification. Applications emphasized include DNA fingerprinting in humans, evolution, and systematics by comparing 18S and 16S rDNA from different species, and genetic engineering of yeast with genes encoding beta carotene.

Preparation for Course

P or C: BIOL 509.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

Free Electives

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Biology with Life Science Teaching Certification (B.S.)

Program: B.S.

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

Learning Goals

Provide coursework, research experience, and advising for students who seek employment after the B.S. degree or who expect to enter graduate and professional schools.

Learning Outcomes

- Students should have demonstrated comprehension of basic biological principles and theories and a demonstrated ability to apply those theories and principles to problem solving.
- Students should have demonstrated knowledge of the scientific method, and should be able to apply that knowledge to problem solving. Students should also have the ability to critically evaluate biological information.
- Students should have demonstrated the basic knowledge and experience of field and laboratory work and be able to communicate the results of an investigation.

The study of biology is an excellent way to prepare for a career in teaching because it provides the student with a solid foundation in science as well as in teaching. Students who plan to earn a B.S. with a major in biology with life science teaching certification should consult regularly with the coordinator of advising of the School of Education.

To earn a B.S. with a major in biology with life science teaching certification, you must fulfill the requirements specified by the IPFW School of Education and fulfill the requirements of IPFW and of the College of Arts and Sciences with the exception of the foreign language requirement (see Part 4 and Part 8).

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Students who qualify may elect to do an independent project supervised by a faculty member. Credits earned in these courses (BIOL 295 or BIOL 595) cannot be used to satisfy A/B-elective requirements.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- MA - Mathematics course approved for IPFW General Education Area I

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Area III—The Individual, Culture, and Society (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis**One of the following Credits: 0**

(credits included in Supporting Courses, below)

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

School of Arts and Sciences Requirements**English Writing****ENG W233 - Intermediate Expository Writing**

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses**BIOL 117 - Principles of Ecology and Evolution**

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-

biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments

include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

BIOL 491 - Senior Biology Seminar

Students critique and discuss seminar presentations. Each student must select a topic and give an oral presentation on it. Open only to senior biology majors.

Cr. 1.

Session Indicators

(fall, spring)

Supporting Courses (40–42 credits)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

One of the following Credits: 4

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

or

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

One of the following sequences Credits: 8–10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

General Elective Courses (Credits: 10–12)

You must complete at least one course with a laboratory in each group.

A-Electives

(organismal, population, community, and ecosystem)

BIOL 335 - Animal Behavior

Instinct vs. learning; genetics and development of learning; neurobiology; behavioral ecology: habitat selection, mating systems, foraging behavior; sociobiology and human behavior.

Preparation for Course

P: BIOL 117, 119, or equivalent.

Cr. 3.

separate laboratory available (BIOL 336)

BIOL 336 - Animal Behavior Lab

Discussion of methods for collecting and assessing behavioral data; experiments examining learning, thermoregulation, foraging, and habitat use. Experiments will be conducted as group projects.

Preparation for Course

C: BIOL 335 or permission of instructor.

Cr. 1.

Hours

Lab. 3.

BIOL 345 - Vertebrate Biology

Vertebrate diversity and the manner in which species are designed for their particular lifestyles, the relatedness and origins of the major vertebrate taxa, the basic vertebrate body plan, adaptations for feeding and locomotion, natural history of selected vertebrates, current conservation issues regarding vertebrates. Field experiences will include two weekend day trips.

Preparation for Course

P: BIOL 117, 119.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 434 - Marine Community Ecology

Lecture involves a survey emphasizing tropical marine communities including coral reefs, mangrove estuaries, turtle grass, and hard and soft substrate intertidal communities. Community processes such as predation, competition, mutualism, zonation, and behavior are discussed as well as physical-chemical factors such as tides, currents, waves, and salinity. Course includes a required field trip to a marine biological station over spring break for the lab portion. Student required to pay for expenses associated with field trip. Prerequisite for field trip: swimming/snorkeling ability; use of scuba gear is optional.

Preparation for Course

P: one year of college biology; second semester may be taken concurrently.

Cr. 3.

Hours

Class 2, Lab. 1.

Session Indicators

(spring)

includes laboratory

BIOL 445 - Aquatic Biology

Introduction to the roles of physical and chemical factors, predation, and competition in determining the abundance of freshwater organisms and regulating the productivity of lake ecosystems. Laboratories emphasize field work and group or individual projects at the Crooked Lake Biological Station.

Preparation for Course

P: BIOL 117 and one year of general chemistry.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 501 - Field Botany

Field botany is the study of plants in a landscape context. Major course themes include plant identification; plant community analysis and classification, focusing on major plant community types in northeast Indiana; an introduction to basic concepts of geology, hydrology, and soil science as they relate to the distribution and maintenance of plant communities, and a module on habitat preservation and restoration. The course includes two required Saturday field trips.

Preparation for Course

P: BIOL 217 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 502 - Conservation Biology

An investigation of the foundations of conservation biology and emergent topics within the field: conservation ethics, the Endangered Species Act, island biogeography, effective population size, minimum viable populations, edge effects, managing for threatened species, and refuge design.

Preparation for Course

P: BIOL 217 and 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 505 - Biology of Invertebrate Animals

A survey of the invertebrate animals, their morphology, physiology, ecology, and phylogeny.

Preparation for Course

P: Biol 109 or 117 and 119.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 520 - Contemporary Parasitology

This course is designed to provide students, in the various disciplines, with information on parasites that will augment their training to pursue more advanced areas in medicine, allied health, animal, and environmental sciences.

Preparation for Course

P: BIOL 217 and 219, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 543 - Population Ecology

Interactions that determine the dynamics, abundance, and persistence of natural populations. Topics include competition, predation and disease, metapopulations, computer simulation and data analysis, discussions of classical and current literature.

Preparation for Course

P: BIOL 217, 218, and 219; a statistics course is recommended.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 556 - Physiology I

General and comparative physiology. Principles of physiology. Nerve and muscle, temperature regulation, ion and water balance. The critical evaluation of original research papers.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 558)

BIOL 579 - Fate of Chemicals in the Environment

An investigation of the fate and transport of chemicals in the environment, including air, soil/sediment, and water. Special consideration will be given to the degradation of chemicals by microorganisms and to methods to maximize their activities (bioremediation).

Preparation for Course

P: BIOL 217 and a course in organic chemistry.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

includes laboratory

BIOL 580 - Evolution

A study of evolution as a basic concept of the biological sciences; an examination of current methods of experimentation within areas, as well as evidences for the possible mechanisms of evolutionary change.

Preparation for Course

P: BIOL 217 or equivalent.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 582 - Ecotoxicology

An investigation into the effects of environmental pollutants on ecosystem structure and function. The fate of pollutants in the environment is considered as it relates to the direct and indirect effects of chemicals on biota. Also considered are regulatory aspects of ecotoxicology.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 586 - Topics in Behavior and Ecology

In-depth examination of topics in ecology and behavior not treated extensively in other courses, e.g., behavioral ecology of reproduction, foraging ecology and behavior, and the behavioral ecology of defense against predators.

Preparation for Course

P: an ecology course or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated for credit with a different topic.

Dual Level Course

Undergraduate-Graduate

BIOL 592 - The Evolution of Behavior

An investigation of behaviors as adaptations: specializations of sensory and motor mechanisms involved in behavior, animal communication systems, behavioral ecology, patterns of behavior as solutions to ecological problems such as predator avoidance and resource exploitation. Emphasis will be on theoretical principles; examples will be broadly comparative.

Preparation for Course

P: BIOL 580 or equivalent or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 598 - Biology of Fish

A comprehensive study of fish biology that covers topics from physiology to ecology to fisheries management. Lectures include discussions of controversial issues and current research from primary literature. Additionally, the class will participate in several field collecting trips, sometimes in association with state fish biologists, and complete an independent student research project.

Preparation for Course

P: BIOL 217, 218, and 219.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

includes laboratory

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

separate laboratory available (ENTM 207)

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 505 - Molecular Ecology and Evolution

Lectures cover the genetic attributes of both conventional and contemporary molecular markers. Discussions focus primarily on the use of DNA-based markers to address conceptual issues in ecology and evolutionary biology (e. g., mating systems, systematics, phylogeography). Offered in odd-numbered years.

Preparation for Course

P: BIOL 218; one course in biochemistry is recommended. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

FNR 523 - Aquaculture

Historical perspectives and current practices in aquaculture, including production systems, feeds, water quality requirements, and diseases of commercially important species.

Preparation for Course

P: BIOL 217 and 219 or permission of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

B-Electives

(molecular, cellular, and organ-system)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

includes laboratory

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

includes laboratory

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

includes laboratory

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

separate laboratory available (BIOL 382)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

includes laboratory

BIOL 506 - Human Molecular Genetics

A molecular characterization of the human genome, cloning human disease genes, the molecular basis of human genetic disorders that are due to biochemical defects and chromosomal abnormalities, molecular approaches in diagnosis of human disorders, mapping of human genes, and gene therapy.

Preparation for Course

P: BIOL 218; one semester of organic chemistry or biochemistry or signature of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 509 - Molecular Biology and Applications

Up-to-date recombinant DNA methods will be covered; how molecular biology methods have enhanced our understanding of basic biological functions and structures; the applicability of molecular biology in pharmaceuticals, vaccine production, agriculture, bioremediation, and synthesis of commercial products.

Preparation for Course

P: BIOL 218, and CHM 254 or CHM 533, or consent of instructor.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 584)

BIOL 515 - Molecular Genetics

A molecular approach to the problems of structure, duplication, mutation, and phenotypic expression of genetic material.

Preparation for Course

P: BIOL 218, 381, and one semester of organic chemistry.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 516 - Molecular Biology of Cancer

A detailed course examining the molecular mechanisms controlling the growth of animal cells. Emphasis will be placed on current experimental approaches to defining the molecular basis of growth regulation in developing systems and the uncontrolled proliferation of cells in metabolic disorders, such as cancer.

Preparation for Course

P: BIOL 218, 381 or graduate student standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

BIOL 533 - Medical Microbiology

Host-parasite relationships, immunology, bacteria, and viruses associated with infectious diseases.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 565)

BIOL 540 - Biotechnology

Examines research, techniques, and applications for several technologies situated at currently recognized biological frontiers, including recombinant DNA technology, hybridoma technology, protein engineering, agricultural research, and microbiological engineering.

Preparation for Course

P: BIOL 217 and 381 or consent of instructor.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 544 - Principles of Virology

Introduction to the molecular biology of animal, plant, and bacterial viruses. Interaction of viruses and the host cell, viral replication, mechanisms of viral pathogenesis, immunology, chemotherapy, viral genetics, oncology, and vaccines.

Preparation for Course

P: BIOL 218.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 559 - Endocrinology

The study of hormone function. Consideration will be given to the role of hormones in growth, development, metabolism, homeostasis, and reproduction.

Cr. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

BIOL 565 - Immunobiology Lab

A survey course in laboratory experiments and demonstrations using classical immunological techniques and modern immunoassays with up-to-date technological equipment. The laboratory supplements the lecture portion of BIOL 537 but is not required. Typical assays include immuno-double diffusion Ouchterlony methodology, immunofluorescence identification of cell surface antigens, cytokine and mitogen stimulated proliferation of immune cells, ELISA assays, and PAGE with Western blotting.

Preparation for Course

P or C: BIOL 537.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

BIOL 566 - Developmental Biology

Principles of development with emphasis on concepts and experimental evidence for underlying mechanisms, including molecular, cellular, and supracellular approaches.

Preparation for Course

P: BIOL 218.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

separate laboratory available (BIOL 567)

BIOL 567 - Laboratory in Developmental Biology

Descriptive and experimental study of the development of animals. Laboratories do not necessarily follow lecture material.

Preparation for Course

P or C: BIOL 566 or consent of instructor.

Cr. 1.

Hours

Lab. 2.

Dual Level Course

Undergraduate-Graduate

BIOL 584 - Molecular Biology and Applications Laboratory

A lab consisting of mini-projects that emphasize the applications of several molecular biological techniques, such as Southern blotting, DNA-DNA hybridization, purification and cloning of genes into plasmid vectors, genetic engineering and PCR amplification. Applications emphasized include DNA fingerprinting in humans, evolution, and systematics by comparing 18S and 16S rDNA from different species, and genetic engineering of yeast with genes encoding beta carotene.

Preparation for Course

P or C: BIOL 509.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Dual Level Course

Undergraduate-Graduate

School of Education Requirements (Credits: 37-41)

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Block II

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(Optional: Practicum in Middle School) Credits: 4

Total Credits: 131–135

Business (B.S.B.)

Program: B.S.B.

SBMS Undergraduate Student Success Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

The student learning outcomes for the degree are as follows:

- Upon completion of the Bachelors in Business Degree, students will:
- Be able to integrate fundamental principles of business theory and practice.
- Be able to solve problems by modeling, analyzing data (qualitative and numeric), and using critical thinking skills.
- Be able to understand the global and cultural implications of business decisions.
- Be able to understand ethical considerations in business decision.
- Be able to understand the relationship between the community and business.
- Be able to demonstrate the effective communication and teamwork skills.
- Be prepared for life-long learning in a dynamic environment.

The faculty of the Richard T. Doermer School of Business and Management Sciences believe that quality in product and services, competitiveness in the global marketplace, and professionalism are critical to business success. As a result, the undergraduate business curriculum is designed around the principles of competitiveness, quality, and professionalism. Faculty members are dedicated to the development of business professionals who have the knowledge and skills to contribute effectively to their organizations and community.

A significant portion of the B.S.B. curriculum is composed of courses that provide a basic understanding of principles and practices involved in the management of business firms. Another large component, slightly more than half of your credits, is the general education core. These courses provide a well-rounded background necessary for success in a diverse business environment. Further, in order to ensure a balanced educational program, the business curriculum offers ample opportunities to take courses in a specific concentration area of interest to you.

The B.S.B. program is accredited by the International Association for Management Education (AACSB), which provides a voluntary mechanism of quality control. AACSB is the most prestigious business accrediting body in the nation. Only about one-quarter of all business schools in the nation possess this distinction.

Your initial courses are selected from introductory-level general education, business, and economics subjects. When you have qualified for admission to the B.S.B. program, additional opportunities are provided for in-depth studies in a variety of advanced business, management, and analytical subjects. These advanced studies help you prepare for positions of increasing executive responsibility in the business community.

At the time you are admitted to the B.S.B. program, you must declare a specialization in one of five concentrations: accounting, business economics, finance, management, or marketing.

Admission

Students are admitted as pre-business students until they have completed the specific pre-business requirements needed for admission to the Bachelor's degree program.

To be admitted to the B.S.B. program applicants must have a cumulative GPA of 2.00 or higher and will have completed at least 60 credits that apply toward the degree, including the courses listed below. Within this course listing, successful applicants will have (1) a grade of C or better in each course marked with an * and (2) a GPA of 2.30 or better (the grade for ENG W131 is not included in this GPA calculation).

Courses Specifically Required for Admission to the B.S.B. Program

Course Number and Title		Credits
BUS A201*	<i>Principles of Financial Accounting</i>	3
BUS A202*	<i>Principles of Managerial Accounting</i>	3
BUS K211*	<i>Spreadsheets for Business</i>	1
BUS K212*	<i>Introduction to Database Management</i>	1
BUS K213*	<i>Internet Access and Data Analysis for Business</i>	1
BUS L200*	<i>Elements of Business Law</i>	3
BUS W204*	<i>Social, Legal, and Ethical Implications of Business Decisions</i>	3

COM 114	<i>Fundamentals of Speech Communication</i>	3
ECON E201*	<i>Introduction to Microeconomics</i>	3
ECON E202*	<i>Introduction to Macroeconomics</i>	3
ECON E270*	<i>Introduction to Statistical Theory in Economics and Business I</i>	3
ENG W131*	<i>Elementary Composition I (or equivalent)</i>	3
ENG W233*	<i>Intermediate Expository Writing</i>	3
MA 229	<i>Calculus for the Managerial, Social, and Biological Sciences I</i>	3
PSY 120 OR	<i>Elementary Psychology</i>	3
SOC S161	<i>Principles of Sociology</i>	3

Two additional rules apply to applicants' progress through the above courses:

1. No more than 6 credits of these courses may be repeated, and no course may be repeated more than once.
2. Both the original and the repeat grades earned in the above courses will be used to compute the admission GPA. This includes courses that you have taken or repeated at IPFW and other IU campuses. Students who transfer in more than 20 credits of the 39 credits listed will be admitted to the B.S.B. program on a probationary basis.

Note:

Bachelor's degree programs in business are offered at other Indiana University and IU-Purdue campuses. Since admission and graduation requirements vary among these campuses, you must meet the admission and graduation requirements of the campus from which you intend to graduate.

Enrollment in Business Courses Numbered 300 and Above

Unless you have attained junior class standing and met at least one of the following conditions, you are not permitted to enroll in a business course numbered 300 or above:

- You have been admitted to the B.S.B. program at IPFW.
- The course is a specified requirement for another bachelor's degree program or minor in which you are enrolled and you have completed all course prerequisites.
- You have obtained written permission from the department through which the course is offered.

If you have enrolled and are not eligible, you will be withdrawn from the course.

B.S.B. REQUIREMENTS

Many of the upper level courses required for this degree are sequenced, and many are offered only in alternate semesters. Therefore, regardless of the number of credits you may have earned prior to admission to the B.S.B. program, the school cannot guarantee that you will be able to complete all degree requirements in fewer than four regular semesters after admission.

To earn the B.S.B., you must complete a minimum of 123 credits as specified below. You must satisfy the requirements of IPFW (see Part 8) and the Richard T. Doermer School of Business and Management Sciences, earn a grade of C or

better in those courses marked with an * above, earn a grade of C or better in each BUS and ECON course, and complete the four categories of requirements described below. Developmental courses (e.g., ENG R150, R151, and W130; MA 109, 111, and 113) do not apply to degree requirements.

Your final consecutive 30 credits must be taken at IPFW after you have been formally admitted to the B.S.B. program. No more than 50 percent of the 123 credits may be in business or economics courses.

IPFW General Education Requirements (53 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(grade of C or better required)

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

Three credits from the courses listed below and then three additional credits in either PSY 120 or SOC S161.

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

OR

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

OR

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

OR

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

OR

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

OR

PSY 335 - Stereotyping and Prejudice

This course examines the topics of stereotyping, prejudice, and discrimination from a social psychological perspective. Relying on empirical findings and relevant theoretical approaches, the course moves beyond lay opinions to explore the social psychological foundations and forms of stereotyping and prejudice, and to examine various strategies for reducing intergroup biases.

Cr. 3.

OR

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

Psy 120 / Soc S161

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

OR

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

- Additional credits in approved Area IV courses: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

SBMS Requirements

- Additional credits in general education courses excluding business, economics, and OLS courses Credits: 8

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(grade of C or better required)

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by

studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(if not used in Area I)

Core and Concentration (Major) Courses (46 credits)

Business Principles (16 credits)

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS J100 - Introduction to College and Business Careers

An orientation to the college environment and to the different careers in the field of business. Students will develop the skills needed to be successful college students and will be introduced to various business career options.

Cr. 1.

Session Indicators

Fall and Spring

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Economics Principles (9 credits)

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

Management Processes (15 credits)

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K321 - Management of Information Technology

An introduction to information systems and technology and their role in the modern business enterprise. Topics include computer-based information systems; managers' role in use, acquisition, and control of information systems and technology for a competitive advantage; ethical use of information; global information systems; and emerging information technologies.

Preparation for Course

P: BUS K212; P or C: BUS F301, P301; junior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Management Policy and Strategy (6 credits)

BUS J401 - Policy and Strategy

The capstone business course integrating, via case analysis, functional areas of study into a comprehensive real-world experience. Emphasis on critical thinking, analysis, strategic planning, and implementation of astute, ethical plans to gain a competitive advantage in the global marketplace.

Preparation for Course

P: BUS F301, M301, P301, Z302; senior class standing — 90 credit hours.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W430 - Leadership, Teamwork, and Group Dynamics in Organizations

An in-depth study of theories of leadership and their impact on organizational effectiveness. Special emphasis on leadership and its interaction with teamwork and group dynamics as well as its special role in managing organizational change in business. The course utilizes a case approach with attention to problem solving.

Preparation for Course

P: BUS Z302.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Area Concentration Credits: 12–24

12–24 credits in an Area Concentration: Upon admission to the B.S.B. program, you will select one of the following five concentrations. While you may change your concentration at any time during your degree program, changes made after your junior year may result in exceeding the 123 credits required to complete your degree. Specific concentration requirements are listed below.

General Elective Courses Credits: 0–12

0–12 sufficient credits from either business or nonbusiness courses, excluding organizational leadership and supervision courses, to complement your professional and education objective and bring your degree total to at least 123 credits.

Total Credits: 123

Chemistry (B.S.)

Program: B.S.
Department of Chemistry
College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

Students will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

- **Chemical literature**

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

-

Analytical Chemistry

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

- Biochemistry (for premedicine and pre dental options)

-- Structure, metabolic relationships, and regulation of biomolecules

- General Chemistry

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships
- Elementary computational skills
- Introductory laboratory skills

- Inorganic Chemistry

- Chemical bonding and structure
- Reactivity, reaction mechanisms, and properties
- Solid state and material science

- Organometallic chemistry
- Spectroscopic determination of structure
- Organic Chemistry
 - Chemical bonding and structure including valence bond and molecular orbital theories
 - Reactivity, reaction mechanisms, and properties of the important functional groups
 - Synthesis
 - Spectroscopic determination of structure
 - Material science and bio-organic chemistry
- Physical Chemistry
 - Mathematical and physical principles that underlie modern Chemistry
 - Detailed understanding of the modern microscopic model of the universe
 - The principal topic areas are:
 1. Quantum Chemistry
 2. Thermodynamics
 3. Statistical mechanics
 4. Spectroscopy
 5. Kinetics

The Bachelor of Science with a major in chemistry program is appropriate for premedical and pre dental students and as preparation for other careers. With appropriate electives and further education, this program allows you to combine chemistry with other fields of study that support careers such as geochemist, computer scientist, biologist, science librarian, science writer, chemical salesperson, patent attorney, industrial chemist, or environmental chemist.

To earn the B.S. with a major in chemistry, in addition to satisfying the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), you must complete the following courses with a cumulative GPA of 2.00 or higher in all CHM courses numbered 300 and above:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
(credits included in Supporting Courses, below)

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Major Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

(credits included in Supporting Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in CHM) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Credits in a modern foreign language Credits: 8

Core and Concentration (Major) Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 265 - Organic Chemistry Laboratory

Laboratory experiments include a large number of techniques for sophisticated organic syntheses. The preparations are designed not only to illustrate the classical reactions discussed in CHM 261, but also to allow for wider application of the principles involved.

Preparation for Course

C: CHM 261.

Cr. 2.

Hours

Lab. 6

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 266 - Organic Chemistry Laboratory

A continuation of CHM 265. A substantial portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify "unknowns" and mixtures and is introduced to some modern instrumental techniques.

Preparation for Course

P: CHM 265; C: CHM 262.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 280 - Chemical Literature

A survey of the tools employed for the effective and efficient search for and the retrieval and analysis of chemical information including online databases, chemical abstracts, patents, handbooks, encyclopedias, and comprehensive works.

Preparation for Course

P: CHM 251 or CHM 255 or CHM 261.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 342 - Inorganic Chemistry

Interpretation and correlation of the physical and chemical properties of inorganic compounds in terms of their electronic configurations and molecular structures. A development of the earlier treatment of the representative elements and the transition elements including magnetic and spectral properties of coordination compounds.

Preparation for Course

P: CHM 218; C: CHM 384.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 376 - Physical Chemistry Laboratory

Preparation for Course

C: CHM 384.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 383 - Physical Chemistry

Kinetic theory of gases, gas equations of state, Maxwell-Boltzmann distribution. Classical thermodynamics including the first, second, and third laws, spontaneity, chemical potential, phase equilibria. Introduction to quantum mechanics: postulates of quantum theory, linear operators, Heisenberg indeterminacy principle, Pauli principle, orbital and spin angular momentum. Simple quantum systems such as particle-in-a-box, harmonic oscillator, hydrogen atom. Symmetry. Atomic and molecular spectroscopy.

Preparation for Course

P: CHM 116, MA 261, and PHYS 251.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 384 - Physical Chemistry

Basic kinetics and chemical reactions: first, second, third order reactions, elementary steps, macroscopic view in terms of concentrations and activities, calculation of equilibrium constants, thermodynamic interpretation of transition state theory. Solution thermodynamics: pure solutions, mixtures, ideal solutions (Raoult's law), ideally dilute solutions (Henry's law), Debye-Hückel theory, colligative properties. Electrochemistry: relationship to thermodynamics and chemical equilibrium. Photochemistry, nuclear magnetic resonance spectroscopy, electrical and magnetic properties of matter.

Preparation for Course

P: 383.

Cr. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

CHM 424 - Analytical Chemistry II

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

Preparation for Course

P: CHM 321; C: CHM 384.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Not required for premedicine, pre dental, physical science teaching or chemistry teaching certification options.

One of the following Credits: 1

CHM 495 - Seminar in Chemistry

Discussion of topics in analytical, inorganic, organic, and physical chemistry and biochemistry. Students are required to select a topic from the primary literature, which must be approved by the coordinator of the seminar series. Students must make an oral presentation of the topic and submit a written report. Open to juniors and seniors majoring in chemistry. May be repeated for credit.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 496 - Advances in Chemistry I

Seminars on recent developments or topics not normally covered in regular courses. Attendance at all departmental seminars is required and students must submit a brief synopsis of each seminar attended.

Preparation for Course

P: two years of college chemistry.

Cr. 0.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 497 - Advances in Chemistry II

Continuation of 496. No credit for 497 unless 496 has been completed. Attendance at all departmental seminars is required and students must submit a brief synopsis of each seminar attended. In addition, students are required to submit a written report on a topic chosen from the primary literature and approved by the coordinator of the seminar series. The 496-497 sequence may be repeated for credit.

Preparation for Course

P: CHM 496.

Cr. 1.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Supporting Courses

- Credits in CS 106, 160, or 210, or equivalent Credits: 3

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Free Electives

- Sufficient additional credits to bring the total to 124.

Total Credits: 124**Premedicine Option**

In addition to the requirements for the B.S. with a major in chemistry, students pursuing the premedicine option must take the following courses:

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 534 - Introductory Biochemistry

Continuation of CHM 533 with emphasis on enzymatic catalysis and metabolic transformations.

Preparation for Course

P: CHM 533 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

One of the following sequences Credits: 8

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

or

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

Additional Credits: 14

Predental Option

In addition to the requirements for the B.S. with a major in chemistry, students pursuing the predental option must take the following courses:

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following sequences Credits: 8

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

or

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 4

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

One of the following Credits: 4

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Additional Credits: 19

Chemistry (B.S.C.)

Program: B.S.C.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

- **Mathematical and quantitative reasoning**

The student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically and computationally.

- **Classical and instrumental laboratory techniques: both analytical and synthetic**

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- **Individual and collaborative problem-solving**

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

-

Chemical literature

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- **Summary of key concepts**

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- Analytical Chemistry

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

- Biochemistry

- Structure, metabolic relationships, and regulation of biomolecules

- General Chemistry

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships
- Elementary computational skills
- Introductory laboratory skills

- Inorganic Chemistry

- Chemical bonding and structure
- Reactivity, reaction mechanisms, and properties
- Solid state and material science
- Organometallic chemistry
- Spectroscopic determination of structure

- Organic Chemistry

- Chemical bonding and structure including valence bond and molecular orbital theories
- Reactivity, reaction mechanisms, and properties of the important functional groups
- Synthesis
- Spectroscopic determination of structure
- Material science and bio-organic chemistry

- Physical Chemistry

- Mathematical and physical principles that underlie modern Chemistry
- Detailed understanding of the modern microscopic model of the universe
- The principal topic areas are:
 1. Quantum Chemistry
 2. Thermodynamics
 3. Statistical mechanics

4. Spectroscopy
5. Kinetics

The Bachelor of Science in Chemistry (B.S.C.) program helps you prepare for graduate study in chemistry and chemistry-related careers in industry or government. Providing the best preparation for any career involving chemical research, this program fulfills recommendations of the Committee on Professional Training of the American Chemical Society, and graduates are certified to the ACS as having fulfilled its requirements.

To earn the B.S.C., you must fulfill all requirements for the B.S. with a major in chemistry (listed above) and complete the additional courses listed below.

Degree Requirements

CHM 343 - Inorganic Chemistry Laboratory

Preparation for Course

C: CHM 342.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Additional credits from the following Credits: 3

- CHM - courses numbered 300 and above

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

or other departmentally approved advanced courses in chemical engineering, computer science; geochemistry, surface chemistry, mathematics, molecular biology, physics, and other allied fields

Additional Credits: 17

Biochemistry Option

The Bachelor of Science in Chemistry (B.S.C.) with biochemistry option helps you prepare for graduate study in biochemistry, and for biochemically oriented careers, particularly in the pharmaceutical and health industries. This program fulfills recommendations of the Committee on Professional Training of the American Chemical Society, and graduates are certified to the ACS as having fulfilled the requirements.

To earn the B.S.C. biochemistry option, you must fulfill all requirements for the B.S. with a major in chemistry (listed above) and complete the additional courses listed below.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and

translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 534 - Introductory Biochemistry

Continuation of CHM 533 with emphasis on enzymatic catalysis and metabolic transformations.

Preparation for Course

P: CHM 533 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

CHM 535 - Biochemistry Laboratory

Laboratory work to accompany CHM 534.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course
Undergraduate-Graduate

The following is highly recommended:

CHM 499 - Special Assignments

Undergraduate research. Students will participate in an original research project with a faculty member. Students are required to submit a written report and make a short oral presentation of their research project. May be repeated for credit.

Cr. 1-5

Hours

Lab. 3-15.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Additional Credits: 16-20

Chemistry with Chemistry Teaching Certification (B.S.)

Program: B.S.

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

The student learning outcomes for the degree are as follows:

The student understands the central concepts, tools of inquiry, and the structure of discipline he or she will teach and can create learning experiences that make these aspects of the subject matter meaningful for his or her students. This includes, but is not limited to:

- Mathematical and quantitative reasoning
- The student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.
- Classical and instrumental laboratory techniques: both analytical and synthetic

Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of variety of modern instruments and will become proficient in fundamental organic synthetic methods.

- Individual and collaborative problem-solving

The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.

- **Chemical literature**

The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.

- Summary of key concepts

In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:

- Analytical Chemistry

- Analytical methods (classical and instrumental)
- Sensitivity and detection limits
- Statistical treatment of data

- General Chemistry

- Semi-quantitative microscopic model of the physical universe based on macroscopic observations
- Terminology
- Periodic relationships
- Elementary computational skills
- Introductory laboratory skills

- Inorganic Chemistry

- Chemical bonding and structure
- Reactivity, reaction mechanisms, and properties
- Solid state and material science
- Organometallic chemistry
- Spectroscopic determination of structure

- Organic Chemistry

- Chemical bonding and structure including valence bond and molecular orbital theories
- Reactivity, reaction mechanisms, and properties of the important functional groups
- Synthesis
- Spectroscopic determination of structure
- Material science and bio-organic chemistry

- Physical Chemistry

- Mathematical and physical principles that underlie modern Chemistry
- Detailed understanding of the modern microscopic model of the universe
- The principal topic areas are:
 - Quantum Chemistry
 - Thermodynamics
 - Statistical mechanics
 - Spectroscopy
 - Kinetics
 - The student understands how children learn and develop, and can provide learning opportunities that support their intellectual, social and personal development.
 - The student understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.
 - The student understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.

- The student uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction and active engagement in learning and self-motivation.
- The student uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
- The student plans instruction based upon knowledge of subject matter, the community and curriculum goals.
- The student understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
- The student is a reflective practitioner who continually evaluates the effects of his or her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.
- The student fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

To earn the B.S. with a major in chemistry teaching certification, you must fulfill all requirements (listed earlier) for the B.S. with a major in chemistry (except for foreign language, and you must complete ENG W233 as your writing requirement) and satisfactorily complete the courses listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.50 or higher. Each professional education course must be completed with a grade of C or better.

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete an initial set of requirements.

Initial Requirements

- PPST

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings;

and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

(A grade of A or B is required)

Block 1: Teacher Education (prerequisite: Initial Requirements)

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (prerequisite: Block 1)

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Student Teaching

- EDUC M501 - *Portfolio* Cr. 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area)

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Additional Credits: 37

Civil Engineering (B.S.C.E.)

Program: B.S.C.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve civil engineering problems
- Graduates will demonstrate the ability to design and conduct experiments, interpret and analyze data, and report results
- Graduates will demonstrate the ability to design a civil engineering system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering software tools and equipment to analyze civil engineering problems and design civil engineering systems
- Graduates will demonstrate an understanding of the professional and ethical responsibility
- Graduates will be able to communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Civil engineers design, construct, manage, and improve the built environment that is all around us. They are involved in all aspects of what makes a community work: the roads, the public transit systems, the freight transit systems, the buildings, the drinking water system, and the waste water/storm water system. They naturally get involved with city or organization planning. IPFW offers state-of-the-art knowledge in all areas of civil engineering such as structures, transportation, geotechnical, construction management, and environmental engineering.

Degree Requirements

To earn the B.S.C.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4) ; you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I-Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II-Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III-The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV-Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V-Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

AREA VI-Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Course Credits: 47

- Credits selected by the department Cr. 19.

CE 210 - Introduction to Geomatics

Basic surveying operations and computations; theories of errors and their analysis; fundamental concepts of horizontal, vertical, and angular measurement; horizontal and vertical control systems; traverse computations; location of man-made structures; use of topographic maps; computation of horizontal and vertical curves.

Preparation for Course

P: ENGR 120, MA 165

Cr. 3.

CE 250 - Statics

Forces and couples, free body diagrams, two- and three-dimensional equilibrium of particle and rigid bodies. Principles of friction, centroids, centers of gravity, and moments of inertia. Virtual work, potential energy, and static stability of equilibrium. Internal forces, shear and bending moment diagrams.

Preparation for Course

P: PHYS 152, MA 261.

Cr. 3.

CE 251 - Dynamics

Kinematics of particles in rectilinear and curvilinear motion. Kinetics of particles, Newton's second law, energy and momentum methods. Systems of particles. Kinematics and plane motion of rigid bodies, forces and accelerations, energy and momentum methods. Introduction to mechanical vibrations.

Preparation for Course

P: CE 250, MA 263.

Cr. 3.

CE 252 - Strength of Materials

Plane stress, plane strain, and stress-strain laws. Applications of stress and deformation analysis to members subjected to centric, torsional, flexural, and combined loading. Introduction to theories of failure, buckling, and energy methods.

Preparation for Course

P: CE 250.

Cr. 3.

CE 315 - Civil Engineering Materials

Study the nature and performance of civil engineering materials and evaluation of their physical and mechanical properties. This course focuses on materials used in construction and maintenance of building and infrastructure such as ferrous and nonferrous metals, aggregates, Portland cement, concrete, masonry, asphalt and asphalt mixtures, wood and composites. Emphasis will be placed on selection criteria, design, applications and proper use of these materials.

Preparation for Course

P: CE 252.

Cr. 3.

CE 316 - Civil Engineering Materials Laboratory

Introduction to civil engineering materials laboratory and design of experiments, with focus on mechanical and physical properties of construction materials; including measurement of strains using mechanical gauges and electrical resistance strain gauges; experiments on metals, aggregates, portland cement, concrete, asphalt and asphalt mixtures, and wood.

Preparation for Course

P: CE 315.

Cr. 1.

CE 318 - Fluid Mechanics

Continuum hypothesis, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis and similitude, Euler and Bernoulli equations, Navier-Stokes equations, viscous flows, boundary-layer flow in channels and around submerged bodies, applications.

Preparation for Course

P: ME 200, CE 251, MA 363.

Cr. 3.

CE 319 - Fluid Mechanics Laboratory

Introduction to fluid mechanics laboratory and design of experiments, including experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, drag forces, boundary-layer studies, falling-ball experiments, and measurements of fluid properties.

Preparation for Course

P: CE 318.

Cr. 1.

CE 330 - Construction Management

Type and functions of management, types of construction, project delivery methods, types of construction contracts, the competitive bidding process, data and project management tools, early and detailed cost estimates, project planning, project scheduling with AOA and AON using the critical path method (CPM), project scheduling with uncertainty using PERT method, resource leveling and allocation, project financing options, project cash flow analysis, computer applications.

Preparation for Course

C: STAT 511.

Cr. 3.

CE 345 - Transportation Engineering

Transportation functions; transportation systems, including land, air, and marine modes; transportation system elements, including traveled way, vehicle, controls, and terminals; techniques of transportation system planning, design, and operation.

Preparation for Course

C: CE 200 or consent of instructor.

Cr. 3.

CE 365 - Environmental Engineering

Introduction to environmental engineering issues, fundamental concepts and applications to mass and energy balance, hydrology, water treatment, water quality management, wastewater treatment, air pollution, hazardous and solid wastes, and their control. Environmental impact statements and global pollution issues.

Preparation for Course

P: CHM 115.

Cr. 3.

CE 375 - Structural Analysis

Stress resultants (reactions, axial forces, shear forces, and bending moments) for beams and framed structures. Deflections of beams and frames by geometric methods (moment-area theorems and applications; conjugate beam analogy). Analysis of statically indeterminate beams and frames by classical stiffness methods; slope deflection and moment distribution. Influence functions and their applications.

Preparation for Course

P: CE 252.

Cr. 3.

CE 376 - Design of Concrete Structures

Flexural analysis and design of reinforced concrete beams including singly and doubly reinforced rectangular beams and T-beams, shear and diagonal tension, serviceability, bond, anchorage and development length, short and slender columns, slabs, footings and retaining walls, including computer applications.

Preparation for Course

P: CE 375.

Cr. 3.

CE 380 - Soil Mechanics

Introduction to the nature and origin of soil and rocks; engineering classification of soil; soil compaction; permeability and seepage, engineering behavior and properties of soils; compressibility; shear strength of soil; lateral earth pressure; and soil-bearing capacity for foundations.

Preparation for Course

P: CE 252, 318.

Cr. 3.

Required Engineering and Mechanical Engineering Courses Credits:
5

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ME 200 - Thermodynamics I

First and second laws, entropy, reversible and irreversible processes, properties of pure substances, applications to engineering problems.

Preparation for Course

C: MA 261.

Cr. 3.

Hours

Class 3,

Mathematics and Science Requirements Credits: 22

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Technical Elective Courses Credits: 12

Civil Engineering

- Courses selected by the department Cr. 36.

CE 379 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 363

Cr. 3.

CE 480 - Finite Element Analysis

Introduction to the fundamentals and the basic concept of the finite-element methods through applications to problems in structures, solid mechanics, fluid mechanics and heat transfer. Emphasis on one and two dimensional problems. Computer implementation.

Preparation for Course

P: CE 318, CE 375.

Cr. 3.

CE 490 - Selected Topics in Civil Engineering

Special topics that cover one or more topics in civil engineering related to structural engineering, environmental engineering, fluid mechanics, hydraulics, hydrology, geotechnical engineering, transportation engineering, pavement analysis and design, materials, and construction engineering and management. May include laboratory experiments if appropriate. Course may be repeated for credit.

Preparation for Course

P: determined by course offered.

Cr. 1-6.

Variable Title

(V.T.)

CE 570 - Advanced Structural Mechanics

Studies of stress and strain, failure theories, and yield criteria; flexure and torsion theories for solid- and thin-walled members; and energy methods.

Preparation for Course

P: CE 270 or 273.

Cr. 3.

Dual Level Course

Dual-Level, Undergraduate-Graduate

Engineering

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Business

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Mathematics and Sciences

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOL G406 - Introduction to Geochemistry

Applications of solution chemistry, phase diagrams, trace elements, radioactive isotopes, and stable isotopes to the study of the earth. The chemical evolution of earth and the origin of important igneous rocks, chemical sediments, and ore deposits.

Preparation for Course

P: G222, CHM 116, or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G451 - Principles of Hydrogeology

Water resources: occurrence, regulation, and management of water; hydrologic cycle, water movement, well hydraulics; water quality and pollution; surface and subsurface investigations; basin-wide development of water resources; legal aspects; relationship of hydrogeology to engineering geology.

Preparation for Course

P: G334 or consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 128

GPA Requirement

All engineering and technical elective courses must have a combined minimum GPA of 2.0.

Computer Engineering (B.S.Comp.E.)

Program: B.S.Comp.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the computer engineering degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve computer engineering problems
- Graduates will demonstrate the ability to design, perform, and simulate experiments, to analyze data, and to interpret results
- Graduates will demonstrate the ability to design a computer system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering tools to analyze computer engineering problems
- Graduates will demonstrate an understanding of professional and ethical responsibility
- Graduates will communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Computer engineers design, develop, and manage systems that process, store, and transmit information. These systems include personal computers, workstations, mainframe computers, computer networks, and all of their various components. Computer engineers are particularly involved in the design and development of “embedded” computers used in aircraft, automobiles, communication switching systems, biomedical instruments, industrial robots, and household appliances. Designing these systems raises both hardware and software issues; a computer engineer typically has the hardware background of an electrical engineer and the software background of a computer scientist. Computer engineers can choose to specialize in areas such as very large scale integrated (VLSI) systems design, embedded

systems, electronic design automation and networks, and communications. IPFW offers state of-the-art knowledge in all areas of computer engineering such as computer architecture, software engineering, and robotics.

Degree Requirements

To earn the B.S.Comp.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 49

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

ECE 202 - Linear Circuit Analysis II

Continuation of ECE 201. Use of Laplace Transform techniques to analyze linear circuits with and without initial conditions. Characterization of circuits based upon, impedance, admittance, and transfer function parameters. Determination of frequency response via analysis of poles and zeros in the complex plane. Relationship between the transfer function and the impulse response of a circuit. Use of continuous time convolution to determine time domain responses. Properties and practical uses of resonant circuits and transformers. Input - output characterization of a circuit as a two-port. Low and high-pass filter design.

Preparation for Course

P: ECE 201; C: MA 262.

Cr. 3.

ECE 270 - Introduction to Digital System Design

An introduction to digital system design and hardware engineering, with an emphasis on practical design techniques and circuit implementation.

Cr. 4.

Hours

Class 3, Lab. 3,

ECE 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation, and presentation of experimental results are illustrated. Statistics and design of experiments are emphasized.

Cr. 2.

ECE 301 - Signals and Systems

Description of deterministic signals through the use of Fourier series. Fourier and Z-transforms. Systems description treated by differential and difference equations including transform methods. Computation of system response to both

continuous and discrete inputs.

Preparation for Course

P: 202.

Cr. 3.

ECE 302 - Probabilistic Methods in Electrical Engineering

An introductory treatment of probability theory including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and response of linear systems to random inputs.

Preparation for Course

P: MA 363; C: ECE 301..

Cr. 3.

ECE 358 - Introduction to VHDL Programming

Introduction to the design of digital systems using VHDL hardware description language. Emphasis on how to write VHDL that will map readily to hardware. Projects assigned using commercial-grade computer-aided design (CAD) tools for VHDL-based design, VHDL simulation, and synthesis.

Preparation for Course

P: ECE 270, ENGR 122 or 221.

Cr. 3.

ECE 362 - Microprocessor Systems and Interfacing

An introduction to basic computer, organization, microprocessor instruction sets, assembly language programming, the design of various types of digital as well as analog interfaces, and microprocessor system design considerations. The accompanying laboratory is designed to provide practical hands-on experience with microprocessor software applications and interfacing techniques. Topics include design and implementation of a simple microcoded 3-bus computer; a detailed study of a particular microcomputer architecture and instruction set; assembly language programming techniques; system control signals and I/O structure; memory system design; I/O port design and handshaking protocols; interrupt control systems; parallel and serial interface subsystems; counter/timer subsystems; and analog (data and control) interfaces.

Preparation for Course

P: ENGR 110 or equivalent programming experience, EE 266 and 267. P: or C: EE 265.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 368 - Data Structures

Provides insight into the use of data structures. Topics include stacks, queues and lists, trees, graphs, sorting, searching, and hashing.

Preparation for Course

P: 364.

Cr. 3.

ECE 387 - Electronics and System Engineering Through Robotics

Introduction to robotics; micro controllers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, 221, ME 200 or 250.

Cr. 3.

ECE 388 - Electronics and System Engineering Through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical and computer engineering designs.

Preparation for Course

C: ECE 387.

Cr. 1

ECE 405 - Senior Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of electrical/ computer component/system design from concept through final design. Emphasis on teamwork, project management, oral and written communication. General lectures on issues important to the engineering profession, such as professional and ethical responsibility, the impact of engineering solutions in a global and societal context, and other contemporary issues.

Preparation for Course

P: 302 and 362.

Cr. 3.

ECE 406 - Senior Engineering Design II

Design II is an extension of Design I and includes but is not limited to (1) continued research, design, and implementation; (2) oral presentation and/or demonstration of the project to faculty and other interested parties; (3) answering appropriate questions related to the project; (4) generation of a final technical report documenting design, development, and performance of project.

Preparation for Course

P: 405 with a grade of C or better.

Cr. 3.

ECE 437 - Computer Design and Prototyping

An introduction to computer organization and design, including instruction set selection, arithmetic logic unit design, datapath design, control strategies, pipelining, memory hierarchy, and I/O interface design.

Preparation for Course

P: ECE 358, 362.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Embedded Real-Time Operating Systems Cr. 4

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ENGR 222 - Object Oriented Programming

This course will introduce the fundamentals of objected oriented programming in C++. Students should gain understanding of the implementation of overloading, inheritance, polymorphism, and templates. A rudimentary introduction to Java is also included.

Preparation for Course

P: by topic: Proficiency in C programming language; C: ENGR 221.

Cr. 1.

Required Mechanical Engineering Courses Credits: 3

ME 253 - Statics and Dynamics

A shortened combined course in statics, including a study of force systems, free-body diagrams, problems in equilibrium, and mass moment of inertia. Dynamics, including a study of the kinematics and kinetics of particles using force and acceleration, work and energy, and impulse and momentum. Introduction to rigid body kinematics and kinetics using Newton's laws.

Preparation for Course

P: MA 261, PHYS 152.

Cr. 3.

Mathematics and Science Requirements Credits: 22

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 12

Computer Engineering Electives

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or ECE 418 - Introduction to Computer Graphics Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

or ECE 351- Software Engineering Cr. 3

ECE 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ECE 465 - Embedded Microprocessors

Introduction to embedded microprocessors with emphasis on the Intel 80C188EB. Topics include programming and interfacing the memory and I/O, bus systems, and DMA transfers.

Preparation for Course

P: 362

Cr. 3.

- ECE 495X- Wireless and Mobile Communication Systems Credits: 3
- ECE 495Z- Cryptography and Network Security Credits: 3

ECE 547 - Introduction to Computer Communication Networks

A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication and telecommunication networks as they evolve toward the integrated networks of the future employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks, reliability and error recovery, and integrated networks.

Preparation for Course

P: ECE 302 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

Engineering Electives**ECE 311 - Electric and Magnetic Fields**

Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

Preparation for Course

P: MA 262 and PHYS 261.

Cr. 3.

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ECE 436 - Digital Signal Processing

Introduction to discrete systems and digital signal processing. Topics include sampling and reconstruction of continuous signals, digital filter design, and frequency analysis including the Fourier transform, the Z transform, the discrete Fourier transform, and the fast Fourier transform.

Preparation for Course

P: 301.

Cr. 3.

ECE 442 - Transmission of Information

Applications of the principles of signal analysis to amplitude, phase, and frequency modulation systems. Behavior of receivers in the presence of noise. Pulse code modulation and multiplex systems. Emphasis on engineering applications of theory to communication system design.

Preparation for Course

P: 301 and 302.

Cr. 3.

Hours

Class 3,

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and ztransfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

Math and Science Electives

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

MA 418 - Computations Laboratory for MA 417

Implementation on digital computer of those appropriate algorithms created in class to solve mathematical programming problems.

Preparation for Course

P: CS 160 or CS 114; C: or P: 417.

Cr. 1.

Hours

Practice 2.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Total Credits: 128

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Computer Engineering Technology (B.S.)

Program: B.S.

Department of Computer and Electrical Engineering Technology & Information

Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning objectives for the degree are:

Graduates will have:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of computer engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.
- A commitment to quality, timeliness, and continuous improvement.

The B.S. in CPET program focuses on applications and application packages in areas of information technology and electronics to support information technology. This can be contrasted with Computer Engineering programs where the focus is on the theory and design of computer-based systems and Computer Science with a focus on computer program design. A graduate of this program will have the training and skills encompassed by a combination of CPET, ECET, CS, and supporting science, mathematics, general education, and other technical areas. CPET courses generally focus on software strongly related to hardware, while ECET courses focus on hardware and related software. A strong feature of the CPET program is the adaptability of the curriculum to concentrate on technical applications similar to those being developed and implemented for use in industry such as: industrial networking, web-based control, electronic devices, web services, and other aspects of enterprise networking. During the latter portion of the B.S. in CPET program, the student also qualifies for an A.S. in EET.

The curriculum described below provides a technical education in the area of industrial and enterprise computer networking. The core provides the student with basic instruction in analog and digital circuit analysis with hands-on laboratory work. It also introduces the fundamentals of computer systems, programming, and applications using word processors, spreadsheets, and high and low-level computer languages. The specialization area provides in-depth knowledge about networking and the requisite hardware and software. Other required courses provide mathematical and communication skills, and sufficient knowledge of the industrial environment to perform effectively in the workplace. The B.S. also enables you to pursue advanced degrees in management, engineering, technology, or computer science.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the degree, you must fulfill the requirements of IPFW (see Part 8) and of the College of Engineering, Technology, and Computer Science (see Part 4); and complete the following courses:

IPFW General Education Requirements

The courses listed below will meet the IPFW General Education Requirements required in the Bachelor of Science in computer engineering technology.

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 7

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6**CPET 490 - Senior Design Project I**

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes, but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) project proposal management, (5) procurement of materials, and (6) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1.

CPET 491 - Senior Design Project II

Phase II includes, but is not limited to (1) continued research and finalized design, (2) project management process, (3) project analysis, design, modeling and prototyping, and testing, (4) oral presentation to faculty and other interested parties, (5) standard-format written technical report.

Preparation for Course

P: CPET 490.

Cr. 2.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Credits:3

Core and Concentration (Major) Courses

CPET 490 and CPET 491 also counted as CPET core courses.

CPET 181 - Computer Operating Systems Basics

Introduction to computer operating systems, organization and functions of hardware components, and system software. Topics include system commands, operating system interface, system utilities, shells programming, file systems and management, introduction to concepts, graphical user interface, device drivers, memory management, processes, concurrency, scheduling, multitasking and multiprocessing. Laboratory experiences include Microsoft Windows and UNIX.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

CPET 470 - Technology Project Management

Topics include project management concepts, project life cycle; project initiation, team building, planning, review, execution, and tracking and control; project-related issues, resource, cost, subcontractor control, and risk management; Web-based project management and collaboration, project management and integration tools. A portion of the course is devoted to case studies. Written reports and oral presentations required.

Preparation for Course

P: B.S. CPET senior class standing.

Cr. 3.

CPET 490 - Senior Design Project I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes, but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) project proposal management, (5) procurement of materials, and (6) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1.

CPET 491 - Senior Design Project II

Phase II includes, but is not limited to (1) continued research and finalized design, (2) project management process, (3) project analysis, design, modeling and prototyping, and testing, (4) oral presentation to faculty and other interested parties, (5) standard-format written technical report.

Preparation for Course

P: CPET 490.

Cr. 2.

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

ECET 146 - Digital Circuits II

Basic digital system techniques with emphasis on programmable logic and ASIC theory. Computer-aided design is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

P: ECET 111. C: ECET 114 or CS 114.

Cr. 3.

Hours

Class 2, Lab. 2.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 207 - AC Electronics Circuit Analysis

AC circuits including the j operator, phasors, reactance, and impedance are studied. Circuit laws, network theorems, and the fundamental concepts of Fourier analysis are applied and used in the study of topics such as passive filters, IC filters, amplifiers, resonant circuits, single-phase and three-phase circuits. Computer-aided analysis of circuits is used.

Preparation for Course

P: ECET157 and MA 154.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 296 - Electronic System Fabrication

This course introduces project planning and basic concepts in electronic design automation (EDA). The student develops the project from an engineering rough sketch to a finished and test printed circuit board by utilization of EDA. New construction and testing techniques are introduced. The final product is presented in an oral and written report.

Preparation for Course

P: ECET 204.

Cr. 2-3.

Hours

Class 1, Lab. 2-3.

Required CPET/ECET/CS Elective Courses Credits: 12

At least two courses or 6 of the 12 elective credits must be CPET/ECET courses. Two courses or 6 of the 12 elective credits may be CS courses.

Selected from the following:

CPET 384 - Wide Area Network Design

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 494 - Java Programming Applications

This course covers design and implementation of modern embedded, stand-alone, Web-based, and distributed Java applications. Topics include definition of classes and objects; Java basics, array and string classes; exceptions and debugging; graphics user interface; file I/O streams; Java multi-threading; Java applets and servlets; Java database connectivity; Java RMI (remote method invocation); Java native interface through C/C++; Java industrial and enterprise applications. Students develop application-oriented final projects.

Preparation for Course

P: ECET 264, CS 160, CS 331, or equivalent, and junior standing.

Cr. 4.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 307 - Analog Network Signal Processing

This is an advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. Transform circuit and signal analysis using Laplace and Fourier techniques are developed, culminating in active filter design applications. Software techniques, such as MATLAB(r) and LabView (tm), to solve mathematical problems are employed.

Preparation for Course

P: ECET 152 or 207 and MA 228.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 346 - Advanced Digital Circuits

Basic system techniques with emphasis on digital ASIC theory. Computer-aided engineering is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

C: 205 and 264.

Cr. 3-4.

Hours

Class 3, Lab. 0-2,

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 382 - C++ Object Oriented Programming for Industrial Applications

This course provides a comprehensive introduction to C++ for students to apply object-oriented programming in industrial applications. A background in C or another high-level language is a must, because all applications in this course involve C and C++. The course introduces the methodology of object identification and behavior, the syntax of C++, and industrial applications.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 393 - Industrial Practice III

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 292.

Cr. 1-5.

ECET 394 - Industrial Practice IV

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 393.

Cr. 1-5.

ECET 395 - Industrial Practice V

Practice in industry, with written reports of this practice by the co-op student.

Preparation for Course

P: ECET 394.

Cr. 1-5.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSPICE, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 411 - Microcomputer Interfacing

A study of microprocessor interfacing techniques and components required to assemble a typical microcomputer system. Emphasis on serial I/O and parallel I/O chips; peripheral interfacing: LED display, keyboard, CRT display, floppy disk, D/As, and stepping motor.

Preparation for Course

P: ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3.

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 434 - PC Systems II

Real-time PC-based operating systems. Programming Graphical User Interface in C++. Embedded PC hardware, busses, and peripheral programming. Writing and integrating device drivers.

Preparation for Course

P: ECET 234 and 264 or CS 161.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 466 - Windows Programming for Industrial Applications

This course provides an overview of Windows programming using visual software for industrial applications. The graphic user interface (GUI) in Windows programming allows operators to interact with computers by clicking a mouse on a graphical panel without understanding the program itself. The topics of the course include introduction to the Windows operating system, text input and output, multiple window programs, creating dialog boxes and menus, dynamic data exchange, dynamic link library, and error handling, multimedia programming, designs of graphic control panels for industrial applications such as gages, meters, and setting devices.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Required Computer Sciences Courses Credits: 8**CS 160 - Introduction to Computer Science I**

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

Required Math Courses Credits: 16

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required English Technical Writing Courses Credits: 3**ENG W234 - Technical Report Writing**

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 127

Minor in Computer Science (B.S. CPET) Credits: 20

If you use the two CPET/ECET/CS Electives in the curriculum for two of the courses, you can receive a CS minor by taking only one course not in the curriculum. See your advisor for more information on the forms required to pursue a Minor.

(Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites)

- Approved computer science courses at the 200 level or above Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

Minor in Mathematics Credits (B.S. CPET): 20

Only one additional Mathematics course (MA 321 or MA 351) is required for a Mathematics Minor beyond the courses required in the curriculum. See your advisor for more information on the forms required to pursue a Minor.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

or

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science (B.A.)

Program: B.A. (in cooperation with the School of Arts and Sciences)
Department of Computer Science
College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students who complete the B.A. program in Computer Science should have mastered fundamental concepts in important areas of computing such as data structures and numerical analysis.

Offered within a liberal-arts framework, the Bachelor of Arts program in computer science helps you prepare for graduate studies or a career in computer science.

To earn the B.A. with a major in computer science, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the requirements below. No more than 10 credits with D grades can be applied to the degree. Of the mathematics courses numbered below MA 261, only MA 165, MA 166, and MA 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted.

Students interested in this program should contact the Department of Mathematical Sciences.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- Quantitative reasoning requirement satisfied by the mathematics courses below Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

- Credits in approved two-course sequence in biology, chemistry, geosciences, or physics Credits: 8–10

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis**MA 314 - Introduction to Mathematical Modeling**

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

(credits included in Mathematics and Statistics Requirement, below)

School of Arts and Sciences Requirements (29 credits)**English Writing**

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

- Credits in Social and Behavioral Sciences Credits: 3
- Credits in Humanities Credits: 3

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

satisfies the science and mathematics requirement (credits included in Mathematics and Statistics Requirement, below)

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Computer Science Core (32 credits)

- Credits in approved advanced computer science courses at the 300 or 400 level Credits: 6

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 271 - Computer Architecture

Introduction to computer organization and architecture. Fundamentals of digital logic and representation of numeric and nonnumeric data. Assembly-level organization and programming, including instruction formats, addressing modes, and subprogram call/return. Design of main memory, cache memory, and virtual memory. Interrupt basics, interrupt-driven I/O, DMA, and bus protocols. Processor organization, data paths, the control unit, micriprogramming, pipelining, and performance enhancements. Multiprocessor and alternative architectures.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 350 - Programming Language Design

A survey of language design issues and their implications for translation and run-time support. Examination of modern programming languages and features: Abstract data and control structures, procedures, parameter passing mechanisms, block structuring and scope rules, input/output, concurrent execution, and storage management. Models of run time behavior. Comparison of imperative and declarative programming languages.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

Mathematics and Statistics Requirement (20 credits)**MA 165 - Analytic Geometry and Calculus I**

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Free Electives (9–11 credits)

- Credits in approved free electives sufficient to bring total to 124.

Total Credits: 124

Computer Science (B.S.)

Program: B.S.

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.
- An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- An ability to apply design and development principles in the construction of software systems of varying complexity.

This program helps you prepare for a career in computer science and for possible graduate study.

The B.S. program in computer science is accredited by the Computing Accreditation Commission of ABET Inc., 111 Market Place, Suite 150, Baltimore, MD 21202-402, telephone, 410-347-7700. In addition to satisfying the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), you must complete the following. Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades will be accepted in other courses.

IPFW General Education Requirements (40 Credits)

Area I—Linguistic and Numerical Foundations (10 Credits)

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences (12 Credits)

Laboratory Science Sequence (8-10 Credits)

One of the following lab science sequences must be taken.

Course Number	Course Title	Credits
BIOL 108/109	Biology of Plants and Biology of Animals	8
BIOL 117/119	Principles of Ecology and Evolution and Principles of Structure and Function	8
CHM 115/116	General Chemistry I and II	8
GEOL G103/G104/G211	Earth Science: Materials and Processes, Earth Science: Evolution of the Earth, and Introduction to Paleobiology	9
PHYS 152/251	Mechanics and Heat, Electricity and Optics	10
PHYS 201/202	General Physics I and II	10
PHYS 218/219	General Physics I and II	8
PHYS 220/221	General Physics I and II	8

Science Elective (3-4 Credits)

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 326 - Heredity: A Human Perspective

Advances in genetics will be examined using diverse topics such as cloning and alteration of human genes and/or embryos, genetic screening, and genetic manipulation of other organisms. Students will gain understanding of basic methods utilized by geneticists and learn to critically analyze published data. Reading the discussions related to ethical, social, political, and economic issues will help assess the impact of current developments in genetics. Research on a selected topic leading to an oral presentation and a term paper will provide opportunities for synthesis. Some hands-on laboratory experience will also be an integral part of this course. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: 100, junior standing, and completion of General Education Area I or instructor's permission.

Cr. 3.

BIOL 350 - Plant Physiology

Basic physiological processes and their relationship to plant structure and function. Laboratory experiments provide personal experience with a broad range of psychological phenomena.

Preparation for Course

P: BIOL 108 and one semester of general chemistry.

Cr. 4.

Hours

Class 3, Lab. 3.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform

evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 302 - Puzzles, Strategy Games, and Problem Solving in the Physical Sciences

This course will explore scientific problem solving by comparing and contrasting it with problem solving in two other domains: puzzles and strategy developing representations, defining the problem, using heuristics, and evaluation solutions. Strategy games will be used as a way to practice problem-solving skills in a domain that can be quickly learned. No credit toward a physics major.

Preparation for Course

P: successful completion of General Education Areas I and II.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society (6 Credits)

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought (6 Credits)

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression (3 Credits)

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (3 Credits)

See Part 2 General Education Requirements for approved courses

- CS 306 may not be used to fulfill this requirement.

Major Requirements (54 Credits)

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 232 - Introduction to C and Unix

This course is an introduction to the C language and the Unix operating system. It presumes fluency in a high-level language. The course will focus on standard C and Unix tools, rather than a proprietary version of either. C topics include data types, the syntax for arithmetic, logical and relational functions, control functions, scope, communications with the shell, file i/o, pointers, arrays, structs, typedefs, macro and preprocessor functions, and the use of libraries and multiple source files. Unix topics include the file and directory structures, permissions, shells, standard tools such as history, sort, vi, grep, sed, tar, and make, and simple shell scripting.

Preparation for Course

P: CS 161.

Cr. 3.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 271 - Computer Architecture

Introduction to computer organization and architecture. Fundamentals of digital logic and representation of numeric and nonnumeric data. Assembly-level organization and programming, including instruction formats, addressing modes, and subprogram call/return. Design of main memory, cache memory, and virtual memory. Interrupt basics, interrupt-driven I/O, DMA, and bus protocols. Processor organization, data paths, the control unit, micriprogramming, pipelining, and performance enhancements. Multiprocessor and alternative architectures.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

CS 350 - Programming Language Design

A survey of language design issues and their implications for translation and run-time support. Examination of modern programming languages and features: Abstract data and control structures, procedures, parameter passing mechanisms, block structuring and scope rules, input/output, concurrent execution, and storage management. Models of run time behavior. Comparison of imperative and declarative programming languages.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 460 - Capstone Design and Professional Practice

Student teams will participate in the design and implementation of a substantial software project. Topics include practical issues of software development, quality assurance, and deployment, as well as computing ethics and professional practice.

Preparation for Course

P: CS 360 and senior standing.

Cr. 4.

CS 472 - Operating Systems Design

The design and implementation of modern multiprocessing operating systems. Topics include concurrent programming, real and virtual storage allocation, resource allocation and deadlock prevention and avoidance, job scheduling, and analytic modeling. Students will complete projects involving concurrency and implement a portion of a multiprocessing operating system.

Preparation for Course

P: CS 260 and 271.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

Concentration Area (15 Credits)

To satisfy the Concentration Area requirement, at least 9 credit hours must be chosen from one concentration. The 6 remaining credit hours may be distributed among the other concentration areas. With prior written approval from the Department, 3 credit hours may be chosen from CS 492, CS 494 or CS 495.

Software Engineering Concentration

CS 331 - Introduction to C++ and Object-Oriented Programming

An introduction to the C++ language with emphasis on features supporting object-oriented programming. Fundamental data type and operations. Expression evaluation. Selection and iteration constraints. Functions, procedures, and macro. Standard libraries. Classes: declaration and definition; instances; member functions; constructors and destructors; function overloading; inheritance and polymorphism. Stream input and output. Using classes to encapsulate data structure and implementation details.

Preparation for Course

P: CS 260.

Cr. 3.

CS 368 - Human-Computer Interaction

Introduction to general issues surrounding human-computer interaction (HCI). The course presents principles, design methodologies, tools, and evaluation techniques with an emphasis on human-centered interface design and implementation. Other issues covered include HCI aspects of multimedia systems, World Wide Web, computer-supported cooperative work, and recent paradigms of HCI.

Preparation for Course

P: CS 260.

Cr. 3.

CS 467 - Project Management

Covers the techniques required to manage systems development. Topics include project proposal, planning, estimating, organizing, controlling, and completion. Students practice these techniques on a major project using project management software.

Preparation for Course

P: Senior standing either IS or CS and ENG W234.

Cr. 3.

Network Computing Concentration

CS 372 - Web Application Development

Introduction to Web application development. Characteristics of Web and application servers; Web engineering principles and application architectures; Web page construction; client and server-side scripting; database interaction; Web application deployment and management; security and performance issues; overview of application-layer protocols.

Preparation for Course

P: CS 274.

Cr. 3.

CS 374 - Computer Networks

The design and implementation of data communications networks. Topics include network topologies; message, circuit and packet switching; broadcast, satellite and local area networks; routing; the OSI model with emphasis on the network, transport, and session layers.

Preparation for Course

P: CS 274.

Cr. 3.

CS 445 - Computer Security

A survey of the fundamentals of computer security. Topics include risks and vulnerabilities, policy formation, controls and protection methods, survey of malicious logic, database security, encryption, authentication, intrusion detection, network and system security issues, personnel and physical security issues, security design principles, issues of law and privacy.

Preparation for Course

P: CS 260.

Cr. 3.

Informatics Concentration

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 380 - Artificial Intelligence

Fundamental concepts and techniques of artificial intelligence. Search techniques, including local search and constraint satisfaction. Knowledge representation concepts and methods of reasoning. Software agents, machine learning and neural networks, and AI planning systems.

Preparation for Course

P: CS 260.

Cr. 3.

CS 421 - Advanced Computer Graphics

Advanced topics in computer graphics such as three-dimensional rendering, curve and surface design, antialiasing, animation, and visualization. Other topics will be selected depending on current research trends. Through development of projects, students will gain practical experience about modern computer graphics.

Preparation for Course

P: CS 321.

Cr. 3.

Theoretical Foundations Concentration

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 474 - Compiler Construction

Techniques for the syntax-directed translation of modern high-level languages. Topics include grammars and language specification, language design issues, lexical analysis, LL and LR parsing techniques, semantics, symbol table design, code generation, and local optimization. Students are required to implement a compiler for a subset of a structured high-level language such as Pascal or Ada.

Preparation for Course

P: CS 350.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

Supporting Courses (16 Credits)

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

or

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Electives (14 Credits)

Approved Electives (11 Credits)

Total Credits: 124

Construction Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.
 - Utilizing modern instruments, methods and techniques to implement construction contracts, documents, and codes.
 - Evaluate materials and methods for construction projects.
 - Utilize modern surveying methods for construction layout.
 - Estimate material quantities.
 - Estimate material costs.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
 - Utilize current industry standard equipment.
 - Employ productivity software to solve problems.
- An ability to conduct. Analyze and interpret experiments and apply experimental results to improve processes.
 - Determine forces and stresses in structural systems.
 - Perform economic analyses related to design, construction, and maintenance.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
 - Produce design for construction and operations documents utilization.
 - Perform standard analysis and design in one technical specialty in construction.
 - Select appropriate construction materials and practices.
- An ability to function effectively on teams.
 - Participate actively in team activities during and outside class.
- An ability to identify, analyze and solve technical problems.
 - Apply basic concepts to the solution of hydraulic and hydrology problems.
 - Apply basic concepts to the solution of geotechnics problems.
 - Apply basic concepts to the solution of structures problems.
 - Apply basic concepts to the solution of construction scheduling and management.
 - Apply basic concepts to the solution of construction safety problems.
- An ability to communicate effectively.
 - Demonstrate effective oral communication skills.
 - Demonstrate effective written communication skills.
- A recognition of the need for, and an ability to engage in lifelong learning.
 - Conduct web and library research and report findings.
- An ability to understand professional, ethical and social responsibilities in construction.

- Apply principles of construction law and ethics.
- Perform service learning.
- A respect for diversity and a knowledge of contemporary professional, societal and global issues.
 - Understand societal and global issues.
 - Understand issues of human diversity.
- A commitment to quality, timeliness, and continuous improvement.
 - Produce work of quality and timeliness.
 - Evaluate each course each semester.

Mission

To provide employers and the public of northeast Indiana with educated, technologically equipped graduates, able to serve the varied construction industries (represented by architectural, civil, and construction engineering technologies, and interior design) in advancing the solutions to problems facing the public and private sector.

Goals

- To provide education of the traditional and returning adult student for career success in the construction industry.
- To develop a respect for diversity and a knowledge of contemporary professional, societal, and global issues with an understanding of professional and ethical responsibilities.
- To be responsive to the ever-changing technologies of the construction industries.
- To instill in students the desire for and ability to engage in lifelong learning.

The breadth of the curriculum will provide leadership potential in addressing problems of the region, its people, and its industries.

This program is open to those who have earned an associate degree in architectural engineering technology or civil engineering technology, or the equivalent. Concentrations provide opportunities to prepare you for work in a specific segment of the construction industry. You may choose options in architectural engineering technology, civil engineering technology, or construction engineering technology. Graduates of this program take jobs with contractors, building-materials companies, utilities, architectural firms, engineering firms, and government agencies. The construction engineering technology program does not lead to licensure as a professional engineer or registered architect.

The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone, 410-347-7700. It provides you with problem solving skills, hands-on competency, and required state-of-the-art technical knowledge. Alumni of the department are employed in all areas of the building industry, including construction; architecture; interior design; civil engineering; land surveying; and state, county, and city governments.

To earn the B.S. with a major in construction engineering technology, you must fulfill the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), those for an associate degree in architectural engineering technology or civil engineering technology, and the additional requirements below:

IPFW General Education Requirements

Area II—Natural and Physical Sciences Credits: 4

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

ETCS General Distribution Requirements Credits: 10

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

One of following:

COM 315 - Speech Communication of Technical Information

Open only to students enrolled in technology programs. The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audiovisual materials in such presentations.

Preparation for Course

P: 114.

Cr. 3.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Core and Concentration (Major) Courses Credits: 36

Major Courses

- Technical Selective Credits: 3
(department-approved courses)

ARET 355 - Techniques of Land Utilization

Lectures and projects in land analysis and planning techniques for use in assessment of land development. Subjects will cover building location, grading, drainage, roads, parking requirements, and utilities. Computer application.

Preparation for Course

P: Must be in CNTB program/CNET major.

Cr. 3.

Hours

Class 2, Lab. 3.

CET 381 - Structural Analysis

Techniques in analyzing statistically determinant and indeterminant structures with emphasis on moment-distribution. Standard design procedures for wood and steel structures. Sizing of beams, columns, and connections. Computer applications. Graduation credit requires grade of C or better.

Preparation for Course

P: C or better in CET 283 and MA 227 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 4.

Hours

Class 4.

CET 431 - Properties and Behavior of Soils

Identification and properties of soils with emphasis on laboratory and field testing. Behavior of soils relating to design and construction of structures and highways. Computer applications.

Preparation for Course

P: GEOL G100, Geol L100; must be in CNTB program/CNET major.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 344 - Constructed Project Quality I

Construction and design quality assurance. The role quality control plays in the execution of the construction contract. Inspection trips to construction sites.

Preparation for Course

P: CNET major; CNET 276.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 348 - Senior Capstone Design Project I

The first term of a two-term comprehensive, capstone design project. Establishment and development of the design process with special emphasis placed on teamwork towards the initial Design Proposal -- written and oral.

Preparation for Course

P: Must be in CNTB program/CNET major, senior standing.

Cr. 3.

CNET 442 - Costs Estimating

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. A study of design and construction cost estimation and cost control practices. Development of unit costs for material and labor. Topics include equipment, subcontracts, risk management, overhead, profit, bid strategy, bid price, total development cost, and value engineering. Use of electronic media and computer applications.

Preparation for Course

P: CNET 280, IET 350, and CNET 344.

Cr. 3.

Hours

Class 2, Lab. 3.

CNET 443 - Engineered Construction

Computations for a broad range of design and construction problems such as construction equipment and false-work; winter protection, temporary heat and electrical requirements; humidity, condensation, and equilibrium moisture contents of materials; expansion of materials, structures, curtain walls, and piping; sound absorption and transmission.

Preparation for Course

P: CNET 445.

Cr. 3.

CNET 445 - Construction Project Management I

Planning the organization of people, resources, and activities required for a construction project from inception through design, construction, and operation. Emphasis on time control through critical path scheduling and management-by-exception, and related strategies. Computer applications.

Preparation for Course

P: CNET 344; C: IET 350.

Cr. 3.

CNET 448 - Senior Capstone Design Project II

The second term of a two-term, comprehensive, capstone design project. Multi-interdisciplinary, project-oriented, real-world experience at the cutting edge. Generation and conclusive development of the final design with consideration for design reviews, prototype requirements, scheduling, ergonomics, safety and economic constraints. A written report and oral defense of the project is required.

Preparation for Course

P: CNET 348 and senior standing. Must be in CNTB program/CNET major.

Cr. 3.

CNET 457 - Construction Safety

The study of strategies and technologies in design, construction, and operation for reducing hazards, accidents, injuries, and damage.

Preparation for Course

P: CNET 344; must be in CNTB program/CNET major.

Cr. 3.

Structural Selectives Credits: 3

CET 385 - Fundamentals of Reinforced Concrete

A study of concrete as a construction material and as a structural material. Field methods and practices used in concrete construction. Applied fundamentals of reinforced concrete design as applied to beams, slabs, columns, and footings. Computer applications.

Preparation for Course

P: CET 381 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 3.

or

CET 482 - Steel Structure Design

Applied fundamentals of structural steel design as applied to beams, columns, connections, joists, and detailing.

Preparation for Course

P: CET 381 with a grade of C or better; must be in CNTB program/CNET major.

Cr. 3.

Subtotal Credits: 62

Credits from the A.S. CET or A.S. ARET: 68

Total Credits: 130

Economics (B.A.)

Program: B.A.

College of Arts and Sciences

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

The student learning outcomes for the degree are not available for this degree, contact the program office.

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

To earn the B.A. with a major in economics, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to the following requirements. Correspondence courses, whether from Indiana University or elsewhere, may not be used to satisfy any of the requirements for this major.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III: 3

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in ECON) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution

Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Economics Core Courses (15 credits)

- ECON E201 - Introduction to Microeconomics Cr. 3.
- ECON E202 - Introduction to Macroeconomics Cr. 3.
- ECON E270 - Introduction to Statistical Theory in Economics and Business I Cr. 3.
- ECON E321 - Intermediate Microeconomic Theory Cr. 3.
- ECON E322 - Intermediate Macroeconomic Theory Cr. 3.
- ECON E406 - Senior Seminar Cr. 3.

- Additional Economics Courses Credits: 9
Additional credits in 300/400-level economics courses or in other courses approved by the economics faculty; at least two of these courses must be completed at IPFW.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Electrical Engineering (B.S.E.E.)

Program: B.S.E.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the electrical degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering
- Graduates will demonstrate the ability to identify, formulate, and solve electrical engineering problems
- Graduates will demonstrate the ability to design, perform, and simulate experiments, to analyze data, and to interpret results
- Graduates will demonstrate the ability to design a system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering tools to analyze electrical engineering problems
- Graduates will demonstrate an understanding of professional and ethical responsibility
- Graduates will communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Electrical engineers design, develop, and operate systems that generate and use electrical signals and power. The scope of electrical engineering has expanded tremendously in recent years. It is now the largest branch in engineering, with most graduates employed by manufacturers of electrical and electronic equipment, aircraft, business machines, and scientific equipment. IPFW offers state of-the-art knowledge in all areas of electrical engineering such as robotics, signal processing, and wireless communications.

To earn the B.S.E.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

with the exception of:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 48

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

ECE 202 - Linear Circuit Analysis II

Continuation of ECE 201. Use of Laplace Transform techniques to analyze linear circuits with and without initial conditions. Characterization of circuits based upon, impedance, admittance, and transfer function parameters. Determination of frequency response via analysis of poles and zeros in the complex plane. Relationship between the transfer function and the impulse response of a circuit. Use of continuous time convolution to determine time domain responses. Properties and practical uses of resonant circuits and transformers. Input - output characterization of a circuit as a two-port. Low and high-pass filter design.

Preparation for Course

P: ECE 201; C: MA 262.

Cr. 3.

ECE 208 - Election Devices and Design Laboratory

Laboratory experiments in the measurement of electronic device characteristics. Design of biasing networks, small signal amplifiers, and switching circuits.

Preparation for Course

P: 201.

Cr. 1.

Hours

Lab. 3,

ECE 255 - Introduction to Electronic Analysis and Design

Diode, bipolar transistor, and FET circuit models for the design and analysis of electronic circuits. Single and multistage analysis and design; introduction to digital circuits. Computer-aided design calculations, amplifier operating point design, and frequency response of single and multistage amplifiers. High-frequency and low-frequency designs are emphasized.

Preparation for Course

P: 201.

Cr. 3.

Hours

Class 3

ECE 270 - Introduction to Digital System Design

An introduction to digital system design and hardware engineering, with an emphasis on practical design techniques and circuit implementation.

Cr. 4.

Hours

Class 3, Lab. 3,

ECE 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation, and presentation of experimental results are illustrated. Statistics and design of experiments are emphasized.

Cr. 2.

ECE 301 - Signals and Systems

Description of deterministic signals through the use of Fourier series. Fourier and Z-transforms. Systems description treated by differential and difference equations including transform methods. Computation of system response to both continuous and discrete inputs.

Preparation for Course

P: 202.

Cr. 3.

ECE 302 - Probabilistic Methods in Electrical Engineering

An introductory treatment of probability theory including distribution and density functions, moments, and random variables. Applications of normal and exponential distributions. Estimation of means, variances, correlation, and spectral density functions. Random processes and response of linear systems to random inputs.

Preparation for Course

P: MA 363; C: ECE 301..

Cr. 3.

ECE 311 - Electric and Magnetic Fields

Continued study of vector calculus, electrostatics, and magnetostatics. Maxwell's equations. Introduction to electromagnetic waves, transmission lines, and radiation from antennas.

Preparation for Course

P: MA 262 and PHYS 261.

Cr. 3.

ECE 362 - Microprocessor Systems and Interfacing

An introduction to basic computer, organization, microprocessor instruction sets, assembly language programming, the design of various types of digital as well as analog interfaces, and microprocessor system design considerations. The accompanying laboratory is designed to provide practical hands-on experience with microprocessor software applications and interfacing techniques. Topics include design and implementation of a simple microcoded 3-bus computer; a detailed study of a particular microcomputer architecture and instruction set; assembly language programming techniques; system control signals and I/O structure; memory system design; I/O port design and handshaking protocols; interrupt control systems; parallel and serial interface subsystems; counter/timer subsystems; and analog (data and control) interfaces.

Preparation for Course

P: ENGR 110 or equivalent programming experience, EE 266 and 267. P: or C: EE 265.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ECE 387 - Electronics and System Engineering Through Robotics

Introduction to robotics; micro controllers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, 221, ME 200 or 250.

Cr. 3.

ECE 388 - Electronics and System Engineering Through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical and computer engineering designs.

Preparation for Course

C: ECE 387.

Cr. 1

ECE 405 - Senior Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of electrical/ computer component/system design from concept through final design. Emphasis on teamwork, project management, oral and written communication. General lectures on issues important to the engineering profession, such as professional and ethical responsibility, the impact of engineering solutions in a global and societal context, and other contemporary issues.

Preparation for Course

P: 302 and 362.

Cr. 3.

ECE 406 - Senior Engineering Design II

Design II is an extension of Design I and includes but is not limited to (1) continued research, design, and implementation; (2) oral presentation and/or demonstration of the project to faculty and other interested parties; (3) answering appropriate questions related to the project; (4) generation of a final technical report documenting design, development, and performance of project.

Preparation for Course

P: 405 with a grade of C or better.

Cr. 3.

ECE 436 - Digital Signal Processing

Introduction to discrete systems and digital signal processing. Topics include sampling and reconstruction of continuous signals, digital filter design, and frequency analysis including the Fourier transform, the Z transform, the discrete Fourier transform, and the fast Fourier transform.

Preparation for Course

P: 301.

Cr. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Modern Communications Systems [Credits:3]

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ENGR 222 - Object Oriented Programming

This course will introduce the fundamentals of objected oriented programming in C++. Students should gain understanding of the implementation of overloading, inheritance, polymorphism, and templates. A rudimentary introduction to Java is also included.

Preparation for Course

P: by topic: Proficiency in C programming language; C: ENGR 221.

Cr. 1.

Required Mechanical Engineering Courses Credits: 3

ME 253 - Statics and Dynamics

A shortened combined course in statics, including a study of force systems, free-body diagrams, problems in equilibrium, and mass moment of inertia. Dynamics, including a study of the kinematics and kinetics of particles using force and acceleration, work and energy, and impulse and momentum. Introduction to rigid body kinematics and kinetics using Newton's laws.

Preparation for Course

P: MA 261, PHYS 152.

Cr. 3.

Mathematics and Science Requirements Credits: 22

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 9

At least 3 credits must be from the list of electrical engineering electives

Electrical Engineering Electives

ECE 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ECE 460 - Power Electronics

Introduction to power semiconductor devices, their characteristics and ratings. Analysis and design of power electronics circuits are emphasized. Topics include diode rectifiers, controlled rectifiers, a.c. voltage controllers, thyristor commutation techniques, choppers, pulse-width modulated (PWM) and resonant pulse inverters, static switches, and power supplies.

Preparation for Course

P: 301 and 265 or 255 or equivalent.

Cr. 3.

ECE 465 - Embedded Microprocessors

Introduction to embedded microprocessors with emphasis on the Intel 80C188EB. Topics include programming and interfacing the memory and I/O, bus systems, and DMA transfers.

Preparation for Course

P: 362

Cr. 3.

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and z-transfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Embedded Real-Time Operating Systems Cr. 4

- ECE 495Y - RF Circuits Cr. 3
- ECE 495X - Wireless and Mobile Communication Systems Cr. 3

Engineering Electives

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or ECE 418 - Introduction to Computer Graphics Cr. 3.

CS 360 - Software Engineering

This course provides an introduction to the methods of software engineering. Topics include the software development process, software specification using the UML for analysis and design, software metrics, quality assurance and test plans, and organizational and management issues.

Preparation for Course

P: CS 260 and ENG W234.

Cr. 3.

or ECE 351 - Software Engineering Cr. 3.

ECE 358 - Introduction to VHDL Programming

Introduction to the design of digital systems using VHDL hardware description language. Emphasis on how to write VHDL that will map readily to hardware. Projects assigned using commercial-grade computer-aided design (CAD) tools for VHDL-based design, VHDL simulation, and synthesis.

Preparation for Course

P: ECE 270, ENGR 122 or 221.

Cr. 3.

ECE 368 - Data Structures

Provides insight into the use of data structures. Topics include stacks, queues and lists, trees, graphs, sorting, searching, and hashing.

Preparation for Course

P: 364.

Cr. 3.

ECE 437 - Computer Design and Prototyping

An introduction to computer organization and design, including instruction set selection, arithmetic logic unit design, datapath design, control strategies, pipelining, memory hierarchy, and I/O interface design.

Preparation for Course

P: ECE 358, 362.

Cr. 4.

Hours

Class 3, Lab. 3.

ECE 495 - Selected Topics in Electrical Engineering

Available upon arrangement with the chair of the department and the instructor.

Cr. 1-4.

Variable Title

(V.T.)

Notes

May be repeated for credit.

ECE 495Z - Cryptography and Network Security Credits: 3

ECE 547 - Introduction to Computer Communication Networks

A qualitative and quantitative study of the issues in design, analysis, and operation of computer communication and telecommunication networks as they evolve toward the integrated networks of the future employing both packet and circuit switching technology. The course covers packet and circuit switching, the OSI standards architecture and protocols, elementary queuing theory for performance evaluation, random access techniques, local area networks, reliability and error recovery, and integrated networks.

Preparation for Course

P: ECE 302 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Math and Science Electives

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

MA 418 - Computations Laboratory for MA 417

Implementation on digital computer of those appropriate algorithms created in class to solve mathematical programming problems.

Preparation for Course

P: CS 160 or CS 114; C: or P: 417.

Cr. 1.

Hours

Practice 2.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Total Credits: 127

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Electrical Engineering Technology (B.S.)

Program: B.S.

Department of Computer and Electrical Engineering Technology & Information

Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An appropriate mastery of the knowledge, techniques, skills and modern tools of electrical engineering technology.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes appropriate to program objectives.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively in writing, and in oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- The knowledge of and respect for diverse backgrounds and contemporary societal and global issues concerning the profession.
- A commitment to quality, timeliness, and continuous improvement.

The four-year B.S. EET program prepares students for careers in many fields related to engineering, in electronics or computer related industries, manufacturing, engineering sales, or any industry that uses electric power, electronic communications, computer networks, or computer-controlled equipment. The program provides students with advanced study in specialized fields of electronics and computer networking and provides other courses to build a foundation of technical and non-technical knowledge that is essential in modern industry.

The CEIT department also offers the Bachelor of Science with a major in computer engineering technology (CPET), an Associate of Science in EET and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn the degree, you must complete the A.S. with a major in electrical engineering technology (see above); fulfill the requirements of IPFW (see Part 8) and of the College of Engineering, Technology, and Computer Science (see Part 4); and complete the following courses:

IPFW General Education Requirements

The courses listed below will meet the IPFW General Education Requirements required in the Bachelor of Science in electrical engineering technology.

Area I—Linguistic and Numerical Foundations Credits: 0 (+9 credits in A.S. Program)

These courses are all required for A.S. degree

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W131 Grade C or above required.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 3 (+4 Credits in A.S. Program)

PHYS 218 is required for the A.S. degree)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

Area IV—Humanistic Thought Credits: 3 (+3 credits in A.S. Program)

See Part 2 General Education Requirements for approved courses

One Area IV course is taken for the A.S. degree

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6**ECET 490 - Senior Design Project, Phase I**

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) procurement of materials, and (5) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1-2.

ECET 491 - Senior Design Project, Phase II

Phase II includes but is not limited to (1) continued research and finalized design, (2) oral presentation to faculty and other interested parties, (3) standard-format written technical report.

Preparation for Course

P: ECET 490.

Cr. 2-5.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Core and Concentration (Major) Courses Credits: 15

ECET 490 and ECET 491 also counted as ECET core courses.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

or

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 307 - Analog Network Signal Processing

This is an advanced course in network analysis that stresses network theorems and solutions of time- and frequency-domain problems. Transform circuit and signal analysis using Laplace and Fourier techniques are developed, culminating in active filter design applications. Software techniques, such as MATLAB(r) and LabView (tm), to solve mathematical problems are employed.

Preparation for Course

P: ECET 152 or 207 and MA 228.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 357 - Real-Time Digital Signal Processing

Architecture, instruction set, and hardware and software development tools associated with a fixed-point general purpose DSP VLSI processor are studied. Fundamental principles associated with the processing of discrete time signals are introduced. Common applications such as waveform generation, FIR and IIR digital filtering, and DFT and FFT based spectral analysis and filtering are implemented.

Preparation for Course

P: ECET 264 and 307.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 470 - Technology Project Management

Topics include project management concepts, project life cycle; project initiation, team building, planning, review, execution, and tracking and control; project-related issues, resource, cost, subcontractor control, and risk management; Web-based project management and collaboration; project management and integration tools. A portion of the course is devoted to case studies. Written reports and oral presentations required.

Preparation for Course

P: B.S. CPET senior class standing.

Cr. 3.

ECET 490 - Senior Design Project, Phase I

An extensive individual design and/or analytical project performed in consultation with one or more faculty advisors. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required. Phase I includes but is not limited to (1) faculty acceptance of project proposal, (2) defining and limiting project objectives, (3) initial research and source contacts, (4) procurement of materials, and (5) periodic progress reports.

Preparation for Course

P: Junior or senior status.

Cr. 1-2.

ECET 491 - Senior Design Project, Phase II

Phase II includes but is not limited to (1) continued research and finalized design, (2) oral presentation to faculty and other interested parties, (3) standard-format written technical report.

Preparation for Course

P: ECET 490.

Cr. 2-5.

Required ECET/CPET elective courses selected from the following
Credits: 12

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

CPET 384 - Wide Area Network Design

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 494 - Java Programming Applications

This course covers design and implementation of modern embedded, stand-alone, Web-based, and distributed Java applications. Topics include definition of classes and objects; Java basics, array and string classes; exceptions and debugging; graphics user interface; file I/O streams; Java multi-threading; Java applets and servlets; Java database connectivity; Java RMI (remote method invocation); Java native interface through C/C++; Java industrial and enterprise applications. Students develop application-oriented final projects.

Preparation for Course

P: ECET 264, CS 160, CS 331, or equivalent, and junior standing.

Cr. 4.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 346 - Advanced Digital Circuits

Basic system techniques with emphasis on digital ASIC theory. Computer-aided engineering is strongly emphasized along with system considerations such as criteria for device selection, testability, and vendor selection.

Preparation for Course

C: 205 and 264.

Cr. 3-4.

Hours

Class 3, Lab. 0-2,

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 382 - C++ Object Oriented Programming for Industrial Applications

This course provides a comprehensive introduction to C++ for students to apply object-oriented programming in industrial applications. A background in C or another high-level language is a must, because all applications in this course involve C and C++. The course introduces the methodology of object identification and behavior, the syntax of C++, and industrial applications.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSPICE, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 411 - Microcomputer Interfacing

A study of microprocessor interfacing techniques and components required to assemble a typical microcomputer system. Emphasis on serial I/O and parallel I/O chips; peripheral interfacing: LED display, keyboard, CRT display, floppy disk, D/As, and stepping motor.

Preparation for Course

P: ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3.

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 434 - PC Systems II

Real-time PC-based operating systems. Programming Graphical User Interface in C++. Embedded PC hardware, busses, and peripheral programming. Writing and integrating device drivers.

Preparation for Course

P: ECET 234 and 264 or CS 161.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 435 - Electronic Industrial Controls

Not open to EET students. Familiarization with electronics as applied to industry. Basic theory and application of electronics to controls for industrial equipment and data processing.

Preparation for Course

P: ECET 215, MA 227.

Cr. 3.

ECET 453 - Topics in Telecommunications

An advanced course in telecommunications that introduces and evaluates state-of-the-art systems, services, and applications for current and emerging networking technologies.

Preparation for Course

P: ECET/CPET 355.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 466 - Windows Programming for Industrial Applications

This course provides an overview of Windows programming using visual software for industrial applications. The graphic user interface (GUI) in Windows programming allows operators to interact with computers by clicking a mouse on a graphical panel without understanding the program itself. The topics of the course include introduction to the Windows operating system, text input and output, multiple window programs, creating dialog boxes and menus, dynamic data exchange, dynamic link library, and error handling, multimedia programming, designs of graphic control panels for industrial applications such as gages, meters, and setting devices.

Preparation for Course

P: ECET 264.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 492 - Digital Systems

A study of difference equations, Z-transforms, sample-and-hold circuits, sampling requirements, digital filters, and control algorithms applied to digital control systems.

Preparation for Course

P: ECET 357.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 499 - Electrical Engineering Technology

Hours and subject matter to be arranged by staff.

Cr. 1-9.

Hours

Class 0-4, Lab. 3-9.

Variable Title

(V.T.)

Notes

Repeatable up to 9 credits

Select Either:

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Select Either:

CPET 375 - Microprocessor-Based Digital Systems

A study of the microprocessor system bus; the architecture and interfacing of various processor, memory, and input-output devices; the instruction set; assembly language programming; and design of microprocessor-based digital network.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3,

ECET 375 - Computer Controlled System Designs

A study of computer-controlled systems using microcontrollers, computer numerical control (CNC), and programmable logic controller (PLC). Topics include microcontroller-based control systems, pneumatic and hydraulic controlled systems, data acquisition, D/A and A/D conversions, ladder diagrams, sampling and reconstruction, Z transform, stability analysis techniques, continuous and discrete time-controlled systems, openloop and closed-loop controlled systems, CNC machines, and mechanical hardware.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3.

Select Either:

CPET 472 - Automatic Control Systems

A study of network analysis using Laplace transforms, classical control systems theory, system stability and compensation, and topics on microprocessor-based control systems.

Preparation for Course

P: CPET 307.

Cr. 4.

Hours

Class 3, Lab. 2,

ECET 472 - Automatic Control Systems

A study of network analysis using Laplace Transforms, classical control systems theory, system stability and compensation, and topics on microprocessor-based control systems.

Preparation for Course

P: ECET 307.

Cr. 4.

Hours

Class 3, Lab. 2.

Select Either:

CPET 486 - Robotics and Control Electronics with Microcomputers

A study of robots, robotic sensors, robotic components, and controlling robots with microcomputers. Topics include sensor-based real-time robot control systems; interfacing the following types of sensors: proximity sensors, force sensors, motion sensors, sound sensors, and vision sensors; low-level data acquisition and communication, high-level communication, coordinate transformation, coordinated path generation, and robot motion programming.

Preparation for Course

P: ECET 114, ECET 205.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 486 - Robotics and Control Electronics with Microcomputers

A study of robots, robotic sensors, robotic components, and controlling robots with microcomputers. Topics include sensor-based real-time robot control systems; interfacing the following types of sensors: proximity sensors, force sensors, motion sensors, sound sensors, and vision sensors; low-level data acquisition and communication, high-level communication, coordinate transformation, coordinated path generation, and robot motion programming.

Preparation for Course

P: ECET 205.

Cr. 4.

Non-ECET technical elective courses Credits:3

- CS, MET, or IET courses preferred (*credits may also be from co-op or military service*)

Required math courses Credits: 6 (+ 10 credits in A.S. Program)

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Required English Technical Writing Course Credits: 3

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

Total Credits: 129 (69 in A.S. Program + 60 for B.S.)

Minor in Mathematics Credits: 20

Only two additional courses (CS 160 and MA 175) are required for a Mathematics Minor beyond the courses required in the curriculum. One can be taken as your Non-ECET elective. See your advisor for more information on the forms required to pursue a Minor.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Elementary Education (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in elementary education is intended to prepare students for successful careers as teachers of children in preschool, elementary-primary, and elementary-intermediate classroom settings. The elementary education degree is divided into two concentrations: early childhood, for preschool and elementary-primary school settings, and middle childhood, for elementary-intermediate school settings. Preservice teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in elementary education, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

Early Childhood Concentration

School Settings: Preschool and Elementary-Primary (grades PreK - 3)

General Education Credits: 63

School of Education Credits: 52

Elective Credits: 9

Total Credits: 124

IPFW General Education Requirements Credits: 63

Area I—Linguistic and Numerical Foundations Credits: 18

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 12

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Chemistry or Physics Credits: 3
- Geology or Astronomy Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

Area III—The Individual, Culture, and Society Credits: 12

See Part 2 General Education Requirements for approved courses

- American History Credits: 3
- Economics or Political Science Credits: 3
- Sociology or Psychology 120 Credits: 3

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

or

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- Philosophy Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

or

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 9

EDUC M323 - The Teaching of Music in the Elementary Schools

Fundamental procedures of teaching elementary school music, stressing music materials suitable for the first six grades.

Preparation for Course

P: MUS Z241.

Cr. 2.

Notes

Not open to music majors.

EDUC M333 - Art Experiences for the Elementary Teacher

The selection, organization, guidance, and evaluation of art activities, individual and group. Laboratory experiences with materials and methods of presenting projects. Public school participation required.

Preparation for Course

P: FINA T255.

Cr. 2.

FINA T255 - Crafts and Design

Introduction to formal elements of two- and three-dimensional design and how these apply to contemporary crafts. Aesthetic judgment and personal creativity emphasized. Required for elementary education majors. No credit towards a fine arts major.

Cr. 3.

Hours

Studio 6,

Session Indicators

(fall, spring)

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that

increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Block 2: Professional Education (P: Block 1)

- T.E.A.M. I

EDUC E339 - Methods of Teaching Language Arts

This course describes and appraises the materials, methods, and techniques employed in an elementary school developmental language arts program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

EDUC P251 - Educational Psychology for Elementary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through pre-adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 3: Professional Education (P: Block 1)

EDUC E325 - Social Studies in the Elementary Schools

Explores the sociological backgrounds of education and surveys subject matter, materials, and methods in the content areas. Public school participation required.

Cr. 3.

EDUC E333 - Inquiry in Mathematics and Science

Focuses on planning and managing appropriate science and math experiences with children who are 3 to 8 years of age. Opportunity for exploring, developing, experimenting, and evaluating instructional materials and their inherent possibilities for children's learning. Planning appropriate inquiry-oriented experiences will be stressed.

Cr. 3.

EDUC E336 - Play as Development

Includes theories and development of play and how it can be guided. Shows how children use play to develop individually; understand the physical, social, and cognitive environment; and develop physical and motor skill and creative ability. Includes a section on the selection and construction of play materials.

Cr. 3.

EDUC E337 - Classroom Learning Environments

This course focuses on the curriculum aspects of early childhood programs designed to meet ethnic and cultural differences and planning, utilizing, and evaluating learning environments. Selection of materials and activities and the acquisition of skills for using these to stimulate children's development are major focuses.

Cr. 3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M425 - Student Teaching: Elementary

Classroom teaching and other activities associated with the work of the full-time elementary classroom teacher. Additional fee.

Cr. 1-16.

Credits: 12

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4 (optional)

(for an additional endorsement area)

Electives Credits: 9

Total Credits: 124

Middle Childhood Concentration

School Settings: Elementary-Intermediate (grades 4-6)

General Education Credits: 63

School of Education Credits: 52

Elective Credits: 9

Total Credits: 124

IPFW General Education Requirements Credits: 63

Area I—Linguistic and Numerical Foundations Credits: 18

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 12

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Chemistry or Physics Credits: 3
- Geology or Astronomy Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Area III—The Individual, Culture, and Society Credits: 12

See Part 2 General Education Requirements for approved courses

- American History Credits: 3
- Economics or Political Science Credits: 3
- Sociology or Psychology 120 Credits: 3

One of the following: Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

or

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- Philosophy Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

or

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 9

EDUC M323 - The Teaching of Music in the Elementary Schools

Fundamental procedures of teaching elementary school music, stressing music materials suitable for the first six grades.

Preparation for Course

P: MUS Z241.

Cr. 2.

Notes

Not open to music majors.

EDUC M333 - Art Experiences for the Elementary Teacher

The selection, organization, guidance, and evaluation of art activities, individual and group. Laboratory experiences with materials and methods of presenting projects. Public school participation required.

Preparation for Course

P: FINA T255.

Cr. 2.

FINA T255 - Crafts and Design

Introduction to formal elements of two- and three-dimensional design and how these apply to contemporary crafts. Aesthetic judgment and personal creativity emphasized. Required for elementary education majors. No credit towards a fine arts major.

Cr. 3.

Hours

Studio 6,

Session Indicators

(fall, spring)

MUS Z241 - Introduction to Music Fundamentals

Introduction to musical knowledge and skills including music reading, singing, playing piano and recorder. Prerequisite for EDUC M323.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-

centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

Block 2: Professional Education (P: Block 1)

- T.E.A.M. I

EDUC E339 - Methods of Teaching Language Arts

This course describes and appraises the materials, methods, and techniques employed in an elementary school developmental language arts program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

EDUC P251 - Educational Psychology for Elementary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through pre-adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 3: Professional Education (P: Block 2)

- T.E.A.M. II

EDUC E325 - Social Studies in the Elementary Schools

Explores the sociological backgrounds of education and surveys subject matter, materials, and methods in the content areas. Public school participation required.

Cr. 3.

Credits: 3

EDUC E328 - Science in the Elementary Schools

Objectives, philosophy, selection, and organization of science materials and methods. Concept development and use of multidimensional materials in science experiments. Analysis of assessment techniques and bibliographical materials.

Public school participation required.

Cr. 3.

Credits: 3

EDUC E341 - Methods of Teaching Reading II

This course describes and appraises the materials, methods, and techniques employed in diagnostic and corrective instruction in reading programs. Public school participation required.

Preparation for Course

P: E340.

Cr. 2-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC N343 - Mathematics in the Elementary School

Emphasizes the developmental nature of mathematical ideas and processes and the role of mathematics in the elementary school curriculum. Public school participation required.

Cr. 3.

Credits: 3

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M425 - Student Teaching: Elementary

Classroom teaching and other activities associated with the work of the full-time elementary classroom teacher. Additional fee.

Cr. 1-16.

Credits: 12

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4 (optional)

(for an additional endorsement area)

Electives Credits: 9

Total Credits: 124

English (B.A.)

Program: B.A.

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- Students display the ability to write critically, precisely, and persuasively, especially about topics relevant to their major field and their selected concentration.
- Students demonstrate the ability to communicate knowledge of literary, linguistics, and rhetorical conventions and traditions, especially those of America and England.
- Students can apply the appropriate research tools and methods to demonstrate critical understanding of their selected concentrations.

To earn the B.A. with a major in English, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and those listed below.

As you complete your degree, you will be required to submit clean copies of two papers to the department. The first paper must be from a course taken during the first 15 credits you count toward the major, and the second from a course taken thereafter and counted toward the major. Both papers should be from courses taught in the department, be appropriate to your concentration, and represent your best work. At least one should be based on research and include documentation. Please turn the paper in before the end of the appropriate semester and include a copy of the assignment, if it is available.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression

See Part 2 General Education Requirements for approved courses

- Credits not in your major discipline: 3

Area VI—Inquiry and Analysis

See Part 2 General Education Requirements for approved courses

- Credits not in your major discipline: 3

College of Arts and Sciences Requirements

English Writing

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

Foreign Language credits: 14

- Requirements in Arts and Sciences Part B

Distribution (not in major discipline) Credits: 9

- Requirements in Arts and Sciences Part C

Cultural Studies Credits: 6

- Requirements in Arts and Sciences Part D

Core and Concentration (Major) Courses

- ENG L202 - Literary Interpretation Cr. 3
- Credits in Writing (ENG W203 or a W-prefixed course above the 200-level): 3
- Credits in American literature: 3
- Credits in British literature before 1700: 3
- Credits in British literature after 1700: 3
- Credits in language study (linguistics, history of the English language, or Old or Middle English literature): 3
- **Credits in one of the concentrations as listed: 15–53**
 - Literature
 - Writing
 - Teacher Certification
 - Language
 - Communication Media

General Elective Courses Credits: 0–32

- Sufficient elective credits, selected in consultation with your advisor

Total Credits: 124

Fine Arts (B.A.)

Program: B.A.

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

The student learning outcomes for the degree are as follows:

- Students will develop fundamental technical skills in 2D and 3D media to successfully express artistic ideas and develop an artistic awareness through visual expression. Students who are interested in the B.A. program combine advanced General Education study in such areas as anthropology, english, languages, and psychology towards such careers as Art History, Art Management, and Art Therapy.

The Bachelor of Arts degree is designed to enable students to see, formulate, and articulate concepts through the manipulation of form and materials. The art-making practice is through Department of Fine Arts studio concentrations including ceramics, metalsmithing, drawing, painting, printmaking, and sculpture. The B.A. program is a broad-based liberal arts degree which allows students to explore wide-ranging interests in and out of studio art study. Students can choose to concentrate in a specific art discipline, or may explore a wide range of artistic disciplines. The Bachelor of Arts degree is divided into three parts; 33 credit hours of General Studies, 57-69 credit hours of Content Field (Art Studio and Art History classes), and 21-33 credit hours of General Liberal Arts classes. A total of 123 credit hours of study are required for graduation. Students in the Department of Fine Arts B.A. program must maintain a minimum 2.0 cumulative GPA.

Admission to B.A. Program with a Major in Fine Arts

To earn the B.A., you must fulfill the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4). Students within the fine arts B.A. must maintain a minimum 2.0 GPA within the Content Field (see below).

Components	Credits
I. General Education	33
II. Content Field	57-69
III. General Liberal Arts	21-33
Total	123

IPFW General Education Requirements Credits: 33

Area I Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

College of Visual and Performing Arts Requirements

II. Content Field Credits: 57-69

Students must complete three (3) classes in Art History (9 cr.) plus 36-48 credit hours of studio work to fulfill the Content Field.

100 level Foundation Requirements Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

(P121 is a pre-requisite to P122)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio should consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level Fundamentals studio classes. Some students may be asked to re-take certain Foundation classes to attain department standards.

200 Level Studio Requirements Credits: 12

200 Level Studio*

9 cr.

At least one class each from the 2D and 3D area below.

- FINA P223 Figure Drawing (2D)
- FINA P225 Painting Fundamentals (2D)
- FINA P241 Printmaking Fundamentals (2D)
- FINA P231 Sculpture Fundamentals (3D)
- FINA P233 Metalsmithing Fundamentals (3D)
- FINA P235 Ceramics Fundamentals (3D)

plus

- VCD P273 Computer Art and Design 3 cr.

*Additional 200 level Fundamentals classes beyond the four required can be used in the B.A. Advanced Studio area listed below.

Petition into the B.F. A. Program

Students may petition the Department of Fine Arts to enter the (Bachelor of Fine Arts) B.F.A. program after taking all of the above 200 level Fundamental classes. Candidates for the B.F.A. program will be asked to fill out an application, present a portfolio for review (see below) of seven (7) 200 level studio classes, and be part of an interview with Department of Fine Arts faculty. Judgment will be made based on the above criteria and a review of grades.

Art History Requirements Credits: 9

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(H111 and H112 must be taken in the first four semesters of study)

One additional FINA 300 or 400 level Art History class.

Advanced Studio Courses Credits: 24-36

Studio Electives

At least eight (8) but no more than twelve (12) studio classes can be taken at the Advanced Studio level. At least two classes must be taken at the 300 level in each area of concentration before 400 level classes. 400 level classes can be repeated to meet credit requirements. Of the total credit hours in this category, up to four (4) studio classes can be taken from the Department of Visual Communications and Design (VCD) unless permission from your advisor is given to include more. Advanced studio classes should be selected in consultation with the Chair of the Department of Fine Arts.

III. General Liberal Arts Courses Credits: 21-33

A minimum of seven (7) but no more than eleven (11) liberal arts courses are needed to fulfill the B.A. requirements. Liberal Arts classes are defined as any IPFW class counted towards a degree (does not include remedial courses). An option of pursuing a minor in an outside field is encouraged within these credits.

Total Credits: 123

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Fine Arts faculty. For a review of transferred studio credit, the student should provide the reviewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic

probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

Fine Arts (B.F.A.)

Program: B.F.A.

Department of Fine Arts

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

The student learning outcomes for the degree are as follows:

- Students within the Bachelor of Fine Arts program will acquire the technical virtuosity to be successful as professional artists. Many students who seek a B.F.A. degree have aspirations towards graduate studies in a Masters of Fine Arts (M.F.A.) degree leading to careers such as professorship positions, corporate commissions, gallery ownership, museum curatorships, art criticism, and independent studio careers.

The Bachelor of Fine Arts program is designed for exceptional students who are interested in pursuing a professional career in the field of fine arts. They must have demonstrated superior quality and motivation in a particular studio art discipline. Students within the B.F.A. program can concentrate in ceramics, drawing, metal-smithing, painting, printmaking, or sculpture. Department of Fine Arts students who wish to attain a B.F.A. start in the B.A. program, then petition for formal entrance into the B.F.A. program after the completion of 200-level studio requirements. The Bachelor of Fine Arts degree is divided into two parts; 33 credit hours of General Education classes, and 90 credit hours of art history and studio classes. All B.F.A. students must maintain a 2.5 cumulative G.P.A. and a 3.0 G.P.A. within the Content Field courses (studio and art history) of the B.F.A. program. A total of 123 credit hours of study are required for graduation.

Admission

Students must meet the requirements of IPFW (see Part 8)

Components:	Credits
I. General Education	33
II. Content Field	90
Total	123

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement.)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- (Fine arts majors may not use any FINA-prefixed courses to fulfill this requirement.)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

College of Visual and Performing Arts Requirements

II. Content Field Credits: 90

Students must complete a minimum of 75 credit hours in studio and 15 credit hours in FINA art history classes for the B.F.A.

100 Level Foundation Courses Credits: 12

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

(P121 is a prerequisite to P122)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

100 Level Foundation Portfolio Review Checkpoint

Students in all of the Department of Fine Arts programs will submit a portfolio of 100 level Foundation studio work to be reviewed by Department of Fine Arts faculty. The review is a checkpoint to assure that students have met adequate quality standards in the Foundation program. The portfolio should consist of 12-15 works, with at least two works from each 100 level Foundation course. Upon a satisfactory portfolio review, students will continue in 200 level Fundamentals studio classes. Some students may be asked to re-take certain Foundation classes to attain department standards.

Art History Course Requirements Credits: 15

- 3 additional FINA 300 or 400 level Art History classes. Classes must have FINA prefix.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(H111 and H112 must be taken in the first four semesters of study)

200-Level Course Requirements Credits: 21

FINA P223 - Figure Drawing I

Introduction to drawing the human figure using various media and techniques. Basic anatomy; the skeletal and muscular structure of the human figure as related to drawing is included.

Cr. 3.

FINA P225 - Painting Fundamentals I

Introduction to painting methods and media and the further application of basic principles of composition through varied pictorial problems from still life, landscape, memory, and imagination.

Cr. 3.

FINA P231 - Sculpture Fundamentals

Student will work in a wide variety of sculptural mediums. Assignments will focus on idea-based expression as well as a thorough introduction to different tools and processes of sculptural construction. Projects will allow student expression within a guideline that explores natural and abstract images.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P233 - Metalsmithing Fundamentals

Understanding of the possibilities of the materials and an appreciation of the use of the tools essential for the creation of forms and objects in metal. Basic techniques, raising, planishing, casting, forging, and fabrication are taught. Inventiveness within the discipline imposed by this traditional art form is encouraged.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P235 - Ceramics Fundamentals

Fundamental techniques of forming by hand-building methods, glazing and firing clay objects. Introduction to the creative possibilities of this craft through projects in tile, pottery form, and sculpture. Emphasis on self-expression through good design and understanding the medium.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

FINA P241 - Printmaking Fundamentals

Study of materials, tools, processes in the various methods of printmaking (block printing, lithography, and intaglio) as they are used for contemporary graphic concerns.

Preparation for Course

P: P122, P124, P152.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

B.F.A. Portfolio Review

Each student must submit a portfolio of 200 level work to attain formal acceptance into the B.F.A. program. Each petitioning student must apply to present their work through the Department of Fine Arts office in the semester in which they complete all seven 200 level Fundamentals classes. Each student applying for acceptance into the B.F.A. program will declare their area of studio concentration, i.e., painting, sculpture, with the understanding that areas of art can be interdisciplinary and flexible. The portfolio should consist of 15-20 works, with at least two works from each 200 level Fundamentals course. Consideration of work will be given in accordance to each student's intended concentration area, i.e., printmaking majors should be able to show strong drawing skills. It is highly recommended that students seek faculty advice, especially from faculty whose area students are intending to apply, on which works to submit for review. Faculty evaluations will be based on a student's strong knowledge and skills in:

- Showing competence in representational drawing of volume, pictorial space, and the depiction of the human figure. An understanding of linear perspective should be evident.
- The ability to compose aesthetic element of line, tone/value, shape, texture, color, and 3D form in space.
- Demonstrating technical and aesthetic excellence (for the 60 credit level) in your chosen major; i.e. drawing, ceramics, metalsmithing, painting, printmaking, or sculpture.
- (for 2D majors) drawing, painting, printmaking as well as the demonstration of competence and serious investigation in 3D media.
- (for 3D majors) ceramics, metalsmithing, and sculpture with competence and serious investigation in 2D media.

B.F.A. Portfolio Review Outcome

A student applying for acceptance in the B.F.A. program may be accepted, deferred, or denied. A student's acceptance into the B.f.a. will allow them to advance into 300 level studio classes as a declared B.F.A. major. A deferred student will be asked to re-submit their portfolio for B.F.A. consideration after re-taking requested classes. A student denied entry into the B.F.a. program may wish to continue in the B.A. program or apply once again for entry into the B.F.A. program with permission from the department.

300/400-Level Concentration Courses Credits: 21

- Complete seven classes in declared Concentration Area. Some of these classes might be closely related such as painting and printmaking or sculpture and ceramics. Two 300 level classes must be taken before any 400 level classes in a given area. 400 level classes can be repeated to meet Concentration area requirements.

200/300/400 Electives Courses Credits: 15

- Complete five courses in elective classes. Classes can be either FINA or VCD. Usually these are classes outside the Concentration Area.

Senior Project Requirements Credits: 6

Senior Project

The Senior Project is a two-semester course during the senior year. Students must be signed into these classes by the Chair of the Department of Fine Arts. During this year, students' work will be critiqued by at least three faculty. Each student will be asked to partake in discussions of other student's work during the critiques. Students will also be asked to be part of seminars, attend visiting artists' lectures and demonstrations, visit exhibitions, and present and express ideas about their art work to other seniors. Students must also work closely with a full-time department faculty member as an advisor in their Concentration area. Evaluations of senior work will be based on the following criteria:

- Body of original and ambitious work
- Evidence of depth of thought
- Evidence of research
- Sufficient technical virtuosity
- Ability to explain ideas
- Participation in all departmental senior events
- Professional attitude
- Keeping abreast of new developments in the field as they pertain to your work

B.F.A. Senior Project Documents

Students are required to complete two written documents each semester of the Senior Project year.

- The Senior Projection document should be ready for department faculty by the beginning of their first semester of Senior Project. It should address the ideas they plan on dealing with and developing for the senior year. The quantity of work can be negotiated with the faculty.
- The Self Critique document will be required at the end of each semester as a critical self evaluation of a student's senior project experience. The critique should include ideas about the project and how it helped clarify their artistic direction.

B.F.A. Exhibition

At the end of the second Senior Project semester, the student must exhibit for graduation. The Department of Fine Arts Senior Exhibition will be at the end of the spring semester of each school year. Students can expect to work with the College of Visual and Performing Arts public relations specialist and gallery coordinator on publication materials and arrangements for their senior exhibition.

Total Credits: 123

Recommendations, Requirements, Transfers, and Policies

Recommendations Students should schedule classes within the B.A. program under the guidance of the official departmental advisor.

Residence Requirements For a bachelor's degree, registration in and completion of at least 33 credits of resident course credit at the 200 level or above, including at least 15 credits at the 300 level or above, in courses applicable to the major.

Transfer and Returning Student Credit All studio and art history courses transferred from another institution or former IPFW art programs must be evaluated by appropriate faculty in the Department of Fine Arts program before they may be applied to a major in Fine Arts. See Transfer and Returning Student Credit Review.

Transfer and Returning Student Credit Review Courses in studio art that have been transferred to IPFW from another institution or former IPFW art programs are not counted as part of the Fine Arts major unless they have been reviewed by the Department of Fine Arts faculty. For a review of transferred studio credit, the student should provide the viewer with a portfolio consisting of representative work in each area (e.g. painting, sculpture, etc.) for which the transfer credit is desired. The portfolio should include both studies and finished work and be as encompassing as possible.

Academic Probation/Dismissal Policies

If a student does not meet the university's GPA standard, they will be notified that they have been placed on academic probation and will be asked to make progress towards meeting campus standards. Department of Fine Arts programs have their own academic standards as stated above. If a student is not meeting these standards, they will be notified and placed on departmental academic probation. If a student does not make positive progress towards meeting the academic standards of the department within twelve (12) credit hours of study, they will be subject to dismissal from the Department of Fine Arts program.

French (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

French is the language of many fascinating countries and cultures in Africa, parts of Asia, Europe, and North America. French-speaking countries influence many fields of study, such as the arts, philosophy, politics and world economy, science, and technology. With a major in French and a degree, in particular a B.A., you may continue your education in languages or expand into other fields at a graduate school, or you may pursue a career in business or teaching.

To earn the B.A. with a major in French, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the requirements of the major, given below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in FREN) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)
- Foreign Language

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

or

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

Additional Foreign Language Requirements

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

Distribution (not in FREN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in 300-level French literature courses Credits: 6
- Credits in 300-level French language courses, excluding F325 Oral French for Teachers Credits: *6–9
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3
- Additional credits in 400-level French courses Credits: *9–12

**The combined total of 300-level French language courses and 400-level French courses must be at least 18 credits.*

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

French with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a French major for the B.A. with teacher certification must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the requirements of the major, given below.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in FREN) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements (25–29 credits)

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)
- **Foreign Language (10–14 credits)**

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

or

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

Additional Foreign Language Requirements

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

Distribution (not in FREN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in 300-level French language courses Credits: 6
- Credits in 300-level French literature courses Credits: 6
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3
- Additional credits in 400-level French courses Credits: 9

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II**EDUC P253 - Educational Psychology for Secondary Teachers**

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124.

Total Credits: 124-130

General Studies (B.G.S.)

Program: B.G.S.

Division of Continuing Studies

Kettler Hall 144 ~ 260-481-6828 ~ www.ipfw.edu/dcs/gsdg

The student learning outcomes for the degree are as follows:

- Speak and write precisely, clearly, and persuasively.
- Formulate arguments in a variety of contexts.
- Assess their own arguments and compare and evaluate them with the arguments of others.
- Understand the nature and diversity of individuals, organizations, cultures, and societies.
- Demonstrate understanding of scholarly approaches to such abiding questions as the meaning of life, the role of the arts and humanities, social and behavioral sciences, and sciences and mathematics in understanding what being human means, and the limits of knowledge.
- Apply their knowledge in written, oral communication, or technical competencies.
- Gather, evaluate, select, organize, and synthesize material in order to complete a research or creative project.
- Apply the knowledge gained across interdisciplinary boundaries.

General Studies offers a wide variety of personalized degree options to the traditional and nontraditional student. Students may individually tailor their program to combine a substantial core of courses basic to a traditional university education and study in career-related areas. Within the flexible framework of degree requirements, students may design an undergraduate program that can more readily meet their career and personal-development goals than can a traditional major. Students will be encouraged and assisted in developing a unique academic program complementing their individual interests, abilities, and intellectual and practical concerns.

In addition to taking advantage of the wide variety of daytime, evening, and weekend classes at IPFW, students may choose to earn credit toward their degree through correspondence study. Students may also earn credit by examination, and in some cases earn credit for significant, documentable self-acquired competencies when the learning outcomes have been comparable to those of university-level work. Consideration is given to all previously earned college credit from other accredited institutions. The Associate of Arts in General Studies and Bachelor of General Studies programs may also be tailored to the needs of those unable to study on campus during regularly scheduled periods. Both degrees may be completed online.

Both programs include courses in broad categories called required areas of learning (listed below) and elective credit that students may earn in any IPFW program. The required areas of learning provide broad exposure to the humanities, social sciences, and sciences, while the electives permit students to explore areas of interest, receive credit for prior university-level experiential learning, and tailor the degree to their individual needs. In each plan of study, students must demonstrate competency in each of the following areas: written communication (two courses), oral communication, mathematics, computer literacy, and a diversity course.

After students are admitted to a general studies degree program, students will develop a plan of study to meet their objectives. An advisor will provide assistance in this effort. For further information, refer to the current Indiana University School of Continuing Studies *General Studies Degree Bulletin*.

To earn a B.G.S., students must complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Required Areas of Learning

General studies is a university-wide degree program, certified through Indiana University's School of Continuing Studies. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities Credits: 0-6

(depending upon course selection for general education)

Afro-American Studies	Foreign Language
Classical Studies	History
Communication	Journalism
Comparative Literature	Music
English (except R150 and W130)	Philosophy
Film	Religion
Fine Arts	Theatre
Folklore	Visual Communication and Design

Science and Mathematics Credits: 3-9

(depending upon course selection for general education)

- ANTH B200 and E445 (only)
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K214, K215, and K216)
- ECON E270 (only)
- Entomology
- *ETCS 106
- Forestry and Natural Resources
- GEOG G107, G109, G315 (only)
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- PSY 120, 201, 310, 314, 329, and 416 (only)
- SOC S351 (only)
- SPEA K300 (only)
- Statistics

*required course

Social and Behavior Sciences Credits: 6-12

(depending upon course selection for general education)

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA J101 (only)
- WOST W210 (only)

Required Core and Concentration (Major) Credits: 54

- 12 credits in each required area of learning, including courses from at least two departments in each area
Credits: 36
- 18 credits in one of the three required areas of learning Credits: 18

General Elective Courses Credits: 66

In consultation with an advisor, you are urged to concentrate electives in related departments (15 credits in arts and sciences are required).

Note

Students must complete at least 20 of these credits after admission to the program. No more than 21 credits in a single arts and sciences department/subject area or 30 credits in a single professional school area may be counted. A minimum of 30 credits must be taken at the 300–400 level. At least 30 credits must be taken within the IU system or as a Purdue student at IPFW. No more than 30 credits toward the BGS may be awarded for successful completion of external exams such as CLEP. Students admitted to the BGS program as of Fall 2008 or subsequent semesters may not apply more than 64 credits from a community college toward the completion of the requirements for the BGS degree.

Total Credits: 120

Geology (B.A.)

Program: B.A.

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

The student learning outcomes for the degree are as follows:

- Acquisition of a central core of geological knowledge

- Ability to review and evaluate geologic research
- Ability to synthesize and integrate interconnectedness among geological subdisciplines
- Proficiency in ancillary sciences applied to geology
- Ability to apply simple mathematical solutions to quantifiable problems
- Ability to draw inferences about geological phenomena not encountered in course work
- Empowerment to become agents of change

To earn the B.A. with a major in geology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete required geoscience courses with grades of C or better.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

One of the following: Credits: 0

(credits included in Major Courses, below)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

With L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GEOL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Science Part B Credits: 14

Distribution

One of following Credits: 4-6

- Credits in social and behavioral sciences Credits: 3
- Credits in humanities Credits: 3

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

GEOG G237 - Cartography and Geographic Information

Use of computers in the management of geographic information, including data storage, database construction, creation and production of maps and related representation of geographic data. Computer cartography laboratory, experimentation and interactive experience using GIS and mapping software.

Cr. 3.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G323 - Structural Geology

Nature and origin of structural features of the earth's crust, with emphasis on mechanics of deformation, and graphic and mathematical solution of structural problems. Two lectures and one laboratory per week plus a four-day field trip. Eligible for graduate credit.

Preparation for Course

C: GEOL G222 or written consent of instructor; physics, engineering, or mathematics majors admitted with GEOL G100 or G103 and PHYS 201 (or equivalent).

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3-4

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

All courses require GEOL L100 - General Geology Laboratory Cr. 1-2.
(with the exception of GEOL G103)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Geology (B.S.G.)

Program: B.S.G.

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

The student learning outcomes for the degree are as follows:

- Acquisition of a central core of geological and environmental knowledge
- Ability to review and evaluate geologic and environmental knowledge
- Ability to synthesize and integrate interconnectedness among geological and related disciplines
- Proficiency in ancillary sciences applied to geology
- Ability to apply appropriate mathematical solutions to quantifiable problems
- Ability to draw inferences about phenomena not encountered in course work
- Ability to solve field problems
- Ability to read, write, and give oral presentations of technical papers
- Ability to develop and apply multiple working hypotheses to environmental and geological problems

- Empowerment for advanced study in graduate school or for employment in technical and non-technical fields, possibly as a professional geologist

To earn the B.S.G., you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and complete required courses in geoscience and ancillary subject areas with grades of C or better.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

Credits included in Core Courses, below

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

One of following Credits: 0

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

With L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GEOL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Credits in the first year of a modern foreign language Credits: 8

Core and Concentration (Major) Courses

- Credits in a STAT or CS course approved by your advisor Credits: 3

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory;

stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G319 - Elementary Field Geology

Geologic field methods. Section measurement, geologic mapping, construction of geologic cross-sections, and use of geologic surveying instruments. Class spends 10-14 days in upper peninsula of Michigan, near Marquette.

Preparation for Course

P: G222; C: G334 or consent of instructor.

Cr. 2.

Hours

Class 1, Field 10-14 days,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G323 - Structural Geology

Nature and origin of structural features of the earth's crust, with emphasis on mechanics of deformation, and graphic and mathematical solution of structural problems. Two lectures and one laboratory per week plus a four-day field trip. Eligible for graduate credit.

Preparation for Course

C: GEOL G222 or written consent of instructor; physics, engineering, or mathematics majors admitted with GEOL G100 or G103 and PHYS 201 (or equivalent).

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

or

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of following Credits: 3-4

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
with GEOL L100 (4 credits)

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

with GEOL L100 (4 credits)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See

information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

Option Requirements

- Credits in the Environmental Geology Option or Geology Option Credits: 15–18 (see below)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Environmental Geology Option

This option will help you prepare for advanced study in environmental geology or for work as a professional geologist in the areas of water supply, waste management, geological hazards, and engineering geology.

12 credits from the following:

- Additional credits in 300- or 400-level geology courses Credits: 3

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G406 - Introduction to Geochemistry

Applications of solution chemistry, phase diagrams, trace elements, radioactive isotopes, and stable isotopes to the study of the earth. The chemical evolution of earth and the origin of important igneous rocks, chemical sediments, and ore deposits.

Preparation for Course

P: G222, CHM 116, or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

GEOL G451 - Principles of Hydrogeology

Water resources: occurrence, regulation, and management of water; hydrologic cycle, water movement, well hydraulics; water quality and pollution; surface and subsurface investigations; basin-wide development of water resources; legal aspects; relationship of hydrogeology to engineering geology.

Preparation for Course

P: G334 or consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Total Credits: 15

Geology Option

This is the traditional option in geology. It will help you prepare for advanced study in geology or work as a professional geologist.

Option Requirements

- Field camp experience (e.g., GEOL G429) Credits: 6–7
- Credits in 400-level geology courses Credits: 8
- Additional credits in 300- or 400-level geology courses Credits: 3

Total Credits: 17-18

German (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

To earn the B.A. with a major in German, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the requirements of the major, given below:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops

critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GER) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

- (requirement is satisfied by ILCS I300, listed below)
- Foreign Language

One of the following:

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

or

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

Additional Foreign Language Requirements

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

Distribution (not in GER)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in German culture, normally G362, G363, G463, or G464 Credits: 3
- Credits in 300-level German literature courses Credits: 3
- Additional credits in German at the 300 level Credits: 3
- Credits in 400-level German courses (language, literature, and/or culture) Credits: 9
- GER G318 - German Language Skills I Credits: 3
- ILCS I300 - Methods of Research and Criticism Credits: 3
- ILCS I330 - Cultural Crossroads: Comparative International Cultures Credits: 3

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

German with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification
Department of International Language and Culture Studies
College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a B.A. in German with teacher certification must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the following requirements.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundation

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of following Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

One of following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in GER) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Foreign Language

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

One of following Credits: 4-8

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

Distribution (not in GER)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- Credits in German culture, normally G362, G363, G463, or G464 Credits: 3
- Credits in 300-level German literature courses Credits: 3
- Additional German credits at the 300 level Credits: 3
- Credits in 400-level German courses (language, literature, and/or culture) Credits: 12

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching**EDUC M480 - Student Teaching in the Secondary School**

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)**EDUC M470 - Practicum**

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of

Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124.

Total Credits: 124

History (B.A.)

Program: B.A.

Department of History

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

The student learning outcomes for the degree are as follows:

- Possess broad knowledge and some specialized understanding of the diverse historical pasts of America, Europe, and the World;
- Understand the basic scientific and humanistic methodology of history as an intellectual discipline including the direct experience of evaluating primary sources and secondary literature;
- Demonstrate the ability to read, analyze, and write about historic topics;
- Recognize historical analyses of human experience as the basic outlook of modern culture; and
- Be equipped to continue historical studies throughout life.

To earn the B.A. with a major in history, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and those listed below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in HIST) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

HIST H217 - The Nature of History

An introductory examination of (1) what history is, (2) types of historical interpretation, (3) common problems of historians, and (4) the uses of history.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.

(If you have satisfied the second writing course requirement with another approved course prior to becoming a history major at IPFW, the requirement of HIST H217 will be waived.)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in HIST)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in non-Western culture: Cr. 3
- HIST H113 - History of Western Civilization I Cr. 0

(credits included in Major Courses, below)

Core and Concentration (Major) Courses

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST J495 - Proseminar for History Majors

Selected topics of history. May be repeated for credit with a different topic.

Preparation for Course

P: H217 or equivalent.

Cr. 3.

Variable Title

(V.T.)

- Credits in upper-level American history Cr. 6.
- Credits in upper-level Western European history* Cr. 6.
- Credits in upper-level Other World history* Cr. 6.
- Additional credits in history (H217 excluded) Cr. 3.
 *HIST H232 may not be used to fulfill the Western European or Other World requirements, but may be used for additional credit toward the major or minor.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

History Honors Degree (B.A.)

Program: B.A. Honors
Department of History
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

The student learning outcomes for the degree are as follows:

- Possess broad knowledge and some specialized understanding of the diverse historical pasts of America, Europe, and the World.
- Understand the basic scientific and humanistic methodology of history as an intellectual discipline including the direct experience of evaluating primary sources and secondary literature.
- Demonstrate the ability to read, analyze, and write about historic topics.
- Recognize historical analyses of human experience as the basic outlook of modern culture.
- Be equipped to continue historical studies throughout life.

As an entering student, you become eligible for this honors program by scoring above 600 on the SAT I verbal test or the CEEB history achievement test; thereafter, you must have a GPA of 3.25 or higher or be recommended by a member of the department for admission. Admission to the degree program requires that you submit a written petition to the department no later than the end of your junior year.

Completion of the program requires, in addition to fulfillment of the B.A. requirements,

- a GPA of 3.3 or higher in history and a cumulative GPA of 3.25 or higher
- 9 credits of honors courses, including 6 in history
- satisfactory completion in HIST K499 of an honors thesis
- satisfactory defense of the honors thesis.

Hospitality Management (B.S.) (Fall 2009)

Program: B.S.
Department of Consumer and Family Sciences
College of Health and Human Services

The student learning outcomes for the degree are as follows:

Graduates will demonstrate:

- Mastery of core skills and competencies that underpin Hospitality Management.
- Ability to use a broad knowledge base that informs judgment and choices in business and personal situations.
- Integration and application of hospitality management knowledge to professional situations.
- The ability to make informed choices within dynamic professional situations that respect ethical principals.
- Application of their role as a leader in promoting ethical behavior in a business environment.
- Application of the value, role, and responsibility of the hospitality industry in a community.
- The ability to evaluate complex issues and problems in the hospitality industry using critical thinking and problem solving skills.
- Effective and professional communication in a business environment with staff, superiors, customers, and members of the community using written, oral, and multimedia technology.

Effective Spring 2010 the requirements for this degree will change, see B.S. 2010.

Men and women with leadership ability are in great demand for managerial and administrative positions in the rapidly expanding hospitality industry. The number of available management positions in the industry continues to exceed the number of hospitality graduates each year. Students from this program assume responsibilities for managerial proficiency at various levels and for providing services in the multitude of situations where people eat, travel, or live away from home.

To earn the B.S., you must satisfy the requirements of IPFW (see Part 8), earn a grade of C or better in each required ENG, HTM, and FNN course, and complete the following requirements:

IPFW General Education Requirements Credits: 30

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society: 6

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

CFS General Distribution Requirements Credits: 9

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Business Core Credits: 9

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not

enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Organizational Leadership and Supervision Core Credits: 9

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 476 - Compensation Planning and Management

A technical course in how to plan and implement a total compensation system, including practical experience in job analysis and description, job evaluation, salary survey and analysis, and the development of a structured pay policy. Includes environmental study of behavioral implications and legal environment.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

Hospitality Management Core Credits: 47

FNN 203 - Foods Selection and Preparation

Scientific principles and techniques in food preparation.

Cr. 3.

Hours

Class 2, Lab. 3,

Notes

Credit not given for both FNN 203 and 205.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

HTM 100 - Introduction to the Hospitality and Tourism Industry

An overview of supervisory careers, opportunities, and responsibilities in the food service, lodging, and tourism industry including historical developments, pioneers, and industry leaders; representatives or companies from the three areas.

Cr. 1-3.

3 Cr. Hr. required

HTM 181 - Lodging Management

Organization, management and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of the lodging industry will be discussed. Typically offered Fall, Spring.

Preparation for Course

P: HTM 141.

Cr. 3.

HTM 191 - Sanitation and Health in Foodservice, Lodging, and Tourism

Food safety and other health-related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification examination to receive credit.

Cr. 3.

HTM 212 - Organization and Management in the Hospitality and Tourism Industry

Basic principles of planning, organizing, directing, and controlling human and physical resources will be addressed. Students will also learn how these principles can be applied to maximize the organizational effectiveness of hospitality and tourism businesses.

Preparation for Course

P: Classification 3 or higher.

Cr. 3.

HTM 231 - Hospitality and Tourism Marketing

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are described and evaluated, including packing, the travel trade, advertising, sales promotion, merchandising, and personal selling.

Preparation for Course

P: HTM 141, 181 and HTM 203.

Cr. 3.

HTM 251 - Computers in the Hospitality Industry

Establishes computer competency with the DOS operating system, spreadsheet, and word processing. Explores applications of computers in the hotel and food service industry with emphasis on programs that impact the management of hospitality organizations.

Preparation for Course

P: HTM major or consent of instructor.

Cr. 3.

HTM 291 - Quantity Food Production and Service

An introduction to food preparation methods and service techniques in quantity food settings. Students become familiar with ingredients and culinary terminology, and learn to read and evaluate menus. Recipe conversion and costing skills are developed. Different production schemes and product flow are examined, and the relationship between back-of-the-house and front-of-the-house activities is discussed.

Preparation for Course

C: HTM 291L.

Cr. 3.

HTM 291L - Quantity Food Production and Service Labs

Basic knowledge of foodservice operations. Students learn and develop food production and service skills in the RHIT Cafe and the John Purdue Room. Students are exposed to quantity cooking methods, the use and care of equipment, and service techniques as they rotate through various positions commonly found in foodservice operations. All aspects of dining are experienced by students.

Preparation for Course

C: 291.

Cr. 2.

HTM 301 - Hospitality and Tourism Industry Practicum

Training and practical experience at the entry level, totaling at least 300 hours in an approved hospitality or tourism operation.

Preparation for Course

P: 6 credits in HTM or consent of program coordinator.

Cr. 1.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

2 Cr. Hr. required

HTM 312 - Human Resources Management for the Service Industries

The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: Analysis and design of work, recruiting, selection, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies. Typically offered Fall, Spring.

Preparation for Course

P: classification 3 or higher.

Cr. 3.

HTM 371 - Introduction to Tourism

Principles, practices, and philosophies that affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

Preparation for Course

P: HTM 181 and 203.

Cr. 3.

HTM 411 - Hospitality and Tourism Law

Rights and duties of innkeepers, food operators, and tourism organizations. Topics include civil rights, contracts, negotiable instruments.

Cr. 3.

HTM 491 - Beverage Management

Principles and practices regarding the production, selection, purchasing, storage, and service of beverage alcohol in the hospitality industry. Certification in a Responsible Beverage Service Course is required to earn course credit.

Preparation for Course

P: must be a minimum of 21 years of age and HTM major.

Cr. 2.

HTM 492 - Advanced Foodservice Management

Utilize managerial skills and techniques with planning, organizing, directing, and controlling a full-service restaurant operation. Management teams of two to three students develop, market, and operate an international theme restaurant that is open to the public. Emphasis is placed on utilizing effective management skills to create a high-quality, profitable operation with well planned systems and highly motivated, organized employees.

Preparation for Course

P: 212, 291, 291L, 341, and 491.

Cr. 4.

Hospitality Electives Credits: 21

CFS 399 - Special Issues

I. A multidisciplinary overview of aging. Issues focused on biopsychosocial health and communication patterns relative to successful aging. II. Multidisciplinary course that emphasizes participatory skill of the student in the area of gerontology. Community agencies and services are utilized in this course.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Regularly offered as Issues of Aging I–II Cr. 3.

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

HTM 311 - Procurement Management for Foodservice

Identifies and describes food, supplies, and related merchandise used in the foodservice industry. Provides methods and criteria for recognizing quality, evaluating, specifying, purchasing, and inspecting these products. Discusses the use of

technology in the purchasing component of the foodservice industry.

Preparation for Course

P: HTM 291, 291L.

Cr. 3.

HTM 314 - Franchising

The study of franchise administration, operations, and marketing, with a special emphasis on hospitality-related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

Cr. 3.

HTM 315 - Club Management and Operations

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

Preparation for Course

P: HTM 231.

Cr. 3.

HTM 316 - Casino Management

An overview of the development, operations, and management of casino enterprises. Includes the evolution of gaming, regulatory statutes and agencies, operational concerns, marketing strategies, financial controls, security/surveillance requirements, ethical considerations, and the economic/social impact on the community. Field trip required.

Preparation for Course

P: All students must be 21 years of age.

Cr. 3.

HTM 321 - Equipment for Restaurants, Hotels, and Institutions

Principles of selection, operation, and maintenance of food service equipment including materials, structural details, design, cost, performance, and specification standards.

Preparation for Course

P: 291 and 291L.

Cr. 3.

HTM 322 - Hospitality Facilities Management

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

Preparation for Course

P: HTM 181.

Cr. 3.

HTM 323 - Foodservice Layout and Design

Arrangement of foodservice equipment for efficient use of space. An introduction to computer-aided design for equipment placement within space constraints. Development of work-flow patterns and human engineering considerations.

Preparation for Course

P: 291, 291L, and 321.

Cr. 3.

HTM 341 - Cost Controls in Foodservice and Lodging

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

Preparation for Course

P: BUS A201, HTM 312.

Cr. 3.

HTM 383 - Resort, Cruise, and Entertainment Operations

This class provides a comprehensive analysis of the operations of different styles of resorts, as well as cruise lines, gaming, and other entertainment attractions. Operating structures, systems, and management practices are compared with traditional hotels. The resort development process is explained and alternative resort concepts are discussed, including resort condominium and vacation/interval ownership.

Preparation for Course

P: 181 or consent of instructor.

Cr. 3.

HTM 391 - Specialty Foodservice and Catering

Exploration and creative use of specialty foods and unusual cuisine for the hospitality field. Concepts of management for the effective operation of quantity specialty food service organized in a financial framework involving menu-planning, customer relations, and production-service logistics.

Preparation for Course

P: 291 and 291L.

Cr. 3.

Hours

Class 1, Lab. 6,

OLS 378 - Labor Relations

An introduction to labor relations and the organization of labor unions and federations. Certification, contracts, collective bargaining, grievances, and arbitration are covered. Applicable labor legislation and court decisions are also discussed.

Preparation for Course

P: 376 or instructor permission.

Cr. 3.

Total Credits: 125

Hospitality Management (B.S.) (2010)

Program: B.S.

Department of Consumer and Family Sciences

College of Health and Human Services

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

The BS - Hospitality Management studies are designed to offer students the opportunity to learn and develop the skills and competencies they will need to become successful leaders and entrepreneurs in one of the world's fastest growing industries.

To apply for the BS Hospitality Management, students must meet IPFW degree seeking requirements and complete the prerequisite courses outlined in the Pre-Hospitality Management (Pre-HM) requirements, earning 30 credits and attain a cumulative GPA of 2.0 or higher.

General Program Requirements:

Successfully complete 124 credits in the prescribed Pre-HM and HM Program.

- **Attain a cumulative IPFW GPA of 2.0 or above.**
- Complete HM courses with a cumulative GPA of 2.2 or above.
- Complete all the HM degree requirements within 8 years of first registration into the HM program.
- Abide by the rules and regulations specified in the Bulletin, requirements for degrees (see part 8) and the College of Health and Human Services (see part 4) in effect at the time of admission. In addition students enrolled in the BS hospitality Management are required to follow the CFS student handbook regulations in effect which are available on line at: <http://www.ipfw.edu/cfs/assets/pdf/Student%20Handbook.pdf>

Pre-Hospitality Management (Pre-HM) Requirements:

Students applying for the BS hospitality Management must submit as part of their application, proof of work experience with an HTM Work Experience Portfolio. The purpose of the work experience is for students to be in a position to demonstrate a suitable work ethic and customer care that indicates a potential to work in the hospitality industry. This work experience is non-credit bearing.

Pre-HM courses are mostly prescribed with the exception of some General Education area II and area IV courses. Prescribed Pre-HM courses include all Gen Ed I, III and V areas as well as the HTM 100, Introduction to Hospitality

and Tourism Management. Pre-HM required courses are chosen to establish a sound foundation in English language, mathematical skills adapted to business as well as particularly important scientific areas on which HM Major courses build.

Hospitality Management Major, Requirements

To progress from Pre-Hospitality Management (Pre-HM) and gain admission in the Hospitality Management Major, students must: successfully complete 30 credits in the prescribed Pre-HM courses and attain a cumulative GPA of 2.00 as well as present with their application the Work Experience Portfolio described above. Admission to the HM Major is not limited, applications are reviewed by the department faculty.

Once admitted, students follow a prescribed progression in their second and third year. The fourth year of the program offers students opportunities to choose amongst HM electives and/or special areas of interest and an HR specialization.

To graduate, a student admitted to the HM major must complete the required courses as listed below in the chronological order thus completing all HM level 2 before starting HM level 3 and hence forth completing all HM level 3 before starting HM level 4 courses while also respecting the co- and prerequisites.

Pre-Hospitality Management Requirements

To apply for the Hospitality Management Bachelor of Science program, students must meet IPFW degree seeking requirements and complete the prerequisite course outlined hereunder earning 30 credits and attain a cumulative GPA of 2.0 or higher.

IPFW General Education Requirements Credits: 30

Area I—Linguistic and Numerical Foundations Credits: 9

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II - Natural and Physical Sciences - Credits: 6

See Part II General Education Requirements for approved courses - Cr. 3

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area III - The Individual, Culture and Society - Credits: 6**OLS 252 - Human Relations in Organizations**

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV - Humanistic Thought - Credit: 6

See Part II General Education Requirements for Approved Courses - Cr. 3

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

Area V - Creative and Artistic Expression - Credits: 3

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Pre - Hospitality Management - Pre-HM Courses

Includes General Education Requirement courses: 1 course from Area 2 and 1 course from Area 4 - Cr. 6

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

HTM 100 - Introduction to the Hospitality and Tourism Industry

An overview of supervisory careers, opportunities, and responsibilities in the food service, lodging, and tourism industry including historical developments, pioneers, and industry leaders; representatives or companies from the three areas.

Cr. 1-3.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hospitality Management Major Required Courses

HM Level 2:

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FNN 203 - Foods Selection and Preparation

Scientific principles and techniques in food preparation.

Cr. 3.

Hours

Class 2, Lab. 3,

Notes

Credit not given for both FNN 203 and 205.

FNN 204 - Food, History & Culture

Food, History & Culture is designed to examine the fundamental tenets that govern human behavior around food choices and foodways. symbolic value and meaning of food will be looked at. the relationship of food cultures to consumer behavior will be scrutinized. Study in this course will explore the historical development of the current food cultures in Europe, Asia, Africa, the Middle East and the Americas. Study in this course will also explore the impact of foodways and food choices on nutritional status and health.

Cr. 3.

HTM 181 - Lodging Management

Organization, management and operating procedures of lodging facilities. Guest-employee interactions will be analyzed along with current trends and cutting edge topics in the lodging industry. A history of the lodging industry will be discussed. Typically offered Fall, Spring.

Preparation for Course

P: HTM 141.

Cr. 3.

HTM 141 - Financial Accounting for the Service Industries

Fundamental accounting principles and procedures applied to the hospitality and service industries. Includes study of the uniform system of accounts, financial statements, special purpose journals, and subsidiary ledgers unique to the hospitality and service industries.

Cr. 3.

HTM 191 - Sanitation and Health in Foodservice, Lodging, and Tourism

Food safety and other health-related issues in the hospitality and travel industries. Application of sanitation principles in restaurants, hospitals, schools, hotels, cruise ships, airlines, and international travel are covered. Students must pass a National Sanitation Certification examination to receive credit.

Cr. 3.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 4

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

One of the following credits: 4

FREN F113 - Accelerated First Year French

Required beginning course for students with at least two years of high school French who did not place into F203 or higher. Review of selected material from F111 before proceeding to F112 material.

Preparation for Course

P: two years of high school French (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Notes

Weekly attendance at lab required. Credit will not be given for both F112 and F113.

GER G113 - First-Year German in One Semester

Required beginning course for students with at least two years of high school German who did not place into G203 or higher. Review of selected material from G111 before proceeding to G112 material.

Preparation for Course

P: two years of high school German (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. Credit will not be given for both G112 and G113.

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

HM Level 3:

OLS 376 may be replaced by HTM 312

FNN 304 - Nutrition's Place in Hospitality

This course focuses on fundamental nutrition for the student's personal and professional life. Needs for, functions of, and food sources of nutrients will be covered. Emphasis in this course will be on food habits, trends, and factors affecting selection of foods, and how this relates and can be used in menu planning and evaluation of personal use and in the food service/culinary industry. Emphasis in this course is on nutrition topics pertinent to the food service/culinary industry.

Preparation for Course

P: FNN 204.

Cr. 3.

HTM 231 - Hospitality and Tourism Marketing

Provides students with a customer-oriented approach to marketing in hospitality and tourism. Techniques available to hotels, restaurants, tourism, and travel businesses are described and evaluated, including packing, the travel trade, advertising, sales promotion, merchandising, and personal selling.

Preparation for Course

P: HTM 141, 181 and HTM 203.

Cr. 3.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

HTM 310 - Food and Beverage Operation Management

This course will allow students to understand restaurant and food service business models and master the essential principals of managing successful food and beverage operations. In a balanced approach of theory and practice students will learn to develop food and beverage production and service skills and understand the choices and opportunities available in this field. a special focus is placed on marketing, planning, cost control and guest satisfaction as well as developing the right ambiance and attitude that contributes to successful food preparation and service in a restaurant setting.

Preparation for Course

P: HTM 210.

Cr. 3.

HTM 312 - Human Resources Management for the Service Industries

The principles and practices of managing human resources for effective operations of hospitality and tourism businesses will be covered including: Analysis and design of work, recruiting, selection, training and development, performance management, compensation, employee relations, and strategies for supporting organizational strategies. Typically offered Fall, Spring.

Preparation for Course

P: classification 3 or higher.

Cr. 3.

HTM 322 - Hospitality Facilities Management

Technical and managerial issues related to the operation and maintenance of the physical plant and equipment in hospitality industry facilities.

Preparation for Course

P: HTM 181.

Cr. 3.

HTM 371 - Introduction to Tourism

Principles, practices, and philosophies that affect the economic, social, cultural, psychological, and marketing aspects of human travel and the tourism industry.

Preparation for Course

P: HTM 181 and 203.

Cr. 3.

One of the following credits: 3

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following credits: 3

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

HM Level 4:

Two additional courses required for Level 4. Student must see advisor.

HTM 410 - Dinner Series, Capstone

Capstone Food and Beverage operation course where students will utilize managerial skills and techniques such as but not limited to: planning, organizing, directing, and controlling a fine dining experience. In this course students will: develop, manage, market, and operate a fine dining experience that is open to the public. Emphasis is placed on creating an event that is appreciated by guests by utilizing effective management skills to create a high quality, profitable operation with well planned systems and highly motivated, organization employees.

Preparation for Course

P: HTM 310.

Cr. 3.

Hours

Class 1, Lab. 1.5.

HTM 411 - Hospitality and Tourism Law

Rights and duties of innkeepers, food operators, and tourism organizations. Topics include civil rights, contracts, negotiable instruments.

Cr. 3.

HTM 430 - Hospitality Strategic Management

The purpose of this course is to understand the use and effects of strategic management at various levels of implementation such as personal, business and political in as far as they can positively affect a person's life and business success. To achieve this we will put in practice management skills and knowledge together with personal skills in both practical and reflective situations. This is a dynamic process that will prepare you and develop life long learning skills in areas such as formulating and implementing strategic management.

Preparation for Course

P: HTM 181, 310, 322 and HTM 441.

Cr. 3.

HTM 491 - Beverage Management

Principles and practices regarding the production, selection, purchasing, storage, and service of beverage alcohol in the hospitality industry. Certification in a Responsible Beverage Service Course is required to earn course credit.

Preparation for Course

P: must be a minimum of 21 years of age and HTM major.

Cr. 2.

One of the following credits: 3

FREN F326 - French in the Business World

Study of the language of business activities in France, with an introduction to the structure and functioning of various aspects of French economic life. Useful for students preparing for the proficiency examinations of the Chambre de Commerce de Paris.

Preparation for Course

P: FREN F204 (or equivalent).

Cr. 3.

GER G315 - Business German

Improvement of speaking, writing, listening, and reading skills. Concentration on the language of the German business world. Discussion, grammar, exercises, and letter writing. Conducted in German.

Preparation for Course

P: GER G204 (or equivalent).

Cr. 3.

SPAN S315 - Spanish in the Business World

Introduction to the technical language of the business world with emphasis on problems of style, composition, and translation in the context of Hispanic moracutes.

Preparation for Course

P: SPAN S275.

Cr. 2-3.

One more Foreign Language Class to be determined.

Hospitality Management Major Elective Courses

In addition to the prescribed courses the student much complete 18 credit hours in elective hours. The BS Hospitality Management requires a student to either take 9 HM credits from the list hereunder or 3 HM +9 credits in a specialization field as per the list hereunder. The remainder of the electives may be freely chosen within IPFW courses with respect to the rules that apply to these courses.

HTM Electives:

CFS 399 - Special Issues

I. A multidisciplinary overview of aging. Issues focused on biopsychosocial health and communication patterns relative to successful aging. II. Multidisciplinary course that emphasizes participatory skill of the student in the area of gerontology. Community agencies and services are utilized in this course.

Cr. 1-3.

Variable Title

(V.T.)

Notes

Regularly offered as Issues of Aging I–II Cr. 3.

FNN 403 - Advanced Nutrition: Food from Farm to Fork

This course explores processes involved in the transformation of food as a raw commodity on the farm to a consumable item at the "table." Literally, to study food from farm to fork. This course reviews local, regional, and global food supply systems; industrial as well as non-industrial. Historical perspective is included with comparisons of current and past food supply chains. Study encompasses traceability of food and food sustainability as well as regional and seasonal factors affecting the food supply chain. Included is study of the food supply chain, food availability, and how these influence consumer behavior including food preparation and consumption. The impact of the food supply system on communities, family dynamics, nutritional status, and health is also included.

Preparation for Course

P: FNN 304.

Cr. 3.

HTM 314 - Franchising

The study of franchise administration, operations, and marketing, with a special emphasis on hospitality-related franchises. Includes a study of the legal regulation of franchises, the franchisee-franchiser relationship and unique problems in operating a franchise.

Cr. 3.

HTM 315 - Club Management and Operations

A study of the organization, administration, operation, and opportunities within the private club industry with emphasis on the manager's duties.

Preparation for Course

P: HTM 231.

Cr. 3.

HTM 341 - Cost Controls in Foodservice and Lodging

Application of cost controls; development of cost reduction methods through management policy and decisions; examination of cost control techniques for food, labor, and supplies in addition to the emphasis on beverage management control.

Preparation for Course

P: BUS A201, HTM 312.

Cr. 3.

HTM 383 - Resort, Cruise, and Entertainment Operations

This class provides a comprehensive analysis of the operations of different styles of resorts, as well as cruise lines, gaming, and other entertainment attractions. Operating structures, systems, and management practices are compared with traditional hotels. The resort development process is explained and alternative resort concepts are discussed, including resort condominium and vacation/interval ownership.

Preparation for Course

P: 181 or consent of instructor.

Cr. 3.

HTM 420 - Event Management

The first half of this course focuses on preparing students for the exciting world of event planning. Through class discussions, case studies, service learning and projects. This course will teach students to plan and execute special events with flair and without any unexpected surprises or expenses. Students will leave the class armed with practical advice on every aspect of organizing and managing special events. Students will gain hands on experience through individual service learning projects. The second half of this course is dedicated to walking students through the steps to begin their own event planning business. We will discuss all aspects of creating a small event planning business from legal structures, naming a company, insurance, pricing, bidding and bookkeeping. Students will be required to write a business plan for their own event planning business as the final.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

HR Specialization Electives:

OLS 342 - Interviewing Strategies in Organizations

A study of the various interviews supervisors conduct in organizational settings. This course focuses on general interviewing principles as well as specific types of interviews including selection, information gathering, disciplinary, and performance appraisals.

Preparation for Course

P: OLS 252 and COM 114

Cr. 3.

OLS 378 - Labor Relations

An introduction to labor relations and the organization of labor unions and federations. Certification, contracts, collective bargaining, grievances, and arbitration are covered. Applicable labor legislation and court decisions are also discussed.

Preparation for Course

P: 376 or instructor permission.

Cr. 3.

OLS 468 - Personnel Law

A consideration of personnel law, including EEO, pensions, wage contracts and payments, worker's compensation and insurance, and other statutes, as well as labor laws and arbitration.

Preparation for Course

P: 268 and 376; junior or senior class standing.

Cr. 3.

OLS 476 - Compensation Planning and Management

A technical course in how to plan and implement a total compensation system, including practical experience in job analysis and description, job evaluation, salary survey and analysis, and the development of a structured pay policy. Includes environmental study of behavioral implications and legal environment.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

OLS 479 - Staffing Organizations

An applications-oriented study of key concepts in staffing organizations, including principles and issues in conducting job analysis, preparing job descriptions/specifications, and screening/selecting employees. Special emphasis on the design, validation, and operation of high-volume staffing systems.

Preparation for Course

P: 376; junior or senior class standing.

Cr. 3.

Organization Communication Specialization:

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 320 - Small Group Communication

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups. Focus on the roles, networks, and messages employed by small group communicators.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

Total Credits: 124

Human Services Bachelor of Science (B.S.)

Program: B.S. degree

Department of Human Services

College of Health and Human Services

Neff Hall 130 ~ 260-481-6424 ~ www.ipfw.edu/hs/

The student learning outcomes for the degree are as follows:

- Students will understand basic concepts of a variety of helping theories.
- Students will have an enhanced knowledge of basic helping skills.
- Students will achieve knowledge of organizational functioning through experience in community agencies/treatment facilities.
- Students will be able to write clear, objective and concise reports.
- Students will examine their values and begin a process of personal awareness.
- Students will know the ethical standards for human service workers.
- Students will recognize the need for continued learning and professional development.

The Bachelor of Science in Human Services is a degree that requires a total of 125 semester credit hours. The program is designed to prepare students to become human service professionals who can meet the needs of clients and communities within a diverse society. Examples of job roles that graduates of the degree would be qualified to fill include group home supervisor, substance abuse prevention educator, case manager, social service agency staff/manager, and psychiatric rehabilitation worker/supervisor, among others.

Call the Human Services office at 260-481-6424 for additional information and to be assigned an advisor.

Admission

To gain entry into this program, you must meet all of the requirements for admission to IPFW and comply with internship agency requirements for internship placements. Students should contact the Department of Human Services at 260-481-6424 for more information and to be assigned an advisor.

Human Services Admission Requirements (Effective January 1, 2010)

- Admission to the Human Services Program is by application only. See the HSRV website for an application. (<http://www.ipfw.edu/hs/>)

- Applicants must have completed the following prerequisite courses with a C or better:
 - HSRV 100
 - HSRV 103
 - HSRV 105
 - PSY 120
 - SOC 161
 - ENG 131
 - COM 114
 - ETCS 106
- Applicants must have a 2.5 or higher on a 4.0 scale to qualify for admission.
- Applicants will be required to complete a background check at their own expense and demonstrate meeting the College of Health and Human Services Technical Standards as part of the application process.
- Veterans must submit a copy of their discharge papers.

Internships

Students in the human services program will complete two years of internships during their academic career. The first is completed during the sophomore year and the second is conducted during the senior year. Students should consult with their academic advisor regarding internship opportunities.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

Must complete the following courses with a grade of C or better.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

Must complete the following courses with a grade of C or better.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

- Philosophy elective Cr. 3

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

Must complete the following courses with a grade of C or better.

See Part 2 General Education Requirements for approved courses

- Psychology elective Cr. 3.
- Sociology elective Cr. 3

Human Services Core Credits: 32

Must complete the following courses with a grade of C or better.

HSRV 100 - Introduction to Human Services

An orientation to human services. History, current concepts, ethics, and roles of the various workers in the field are discussed. This course is open to non-HSRV majors.

Cr. 3.

HSRV 103 - Helping Relationship Techniques

This course will provide students with opportunities to increase their effectiveness in helping people. This course will examine the helping process in terms of skills, helping relationship. This course is appropriate for anyone who is entering a career dealing with people. This course is open to non-HSRV majors.

Cr. 3.

HSRV 105 - Basic Interviewing Skills

This course is designed to introduce and develop skills associated with interviewing clients. The focus will be on skill-building and competencies in attending behaviors, client observation skills, open and closed questions, encourager skills, paraphrasing and summarizing, and reflection of feelings and meaning. Advanced interviewing skills will include confrontation, probes, focusing, and information giving. This course is open to non-HSRV majors.

Cr. 3.

HSRV 200 - Behavioral Therapies

This course will cover major theories, terms, and techniques of behavioral therapeutic approaches. It will explore a broad range of intervention strategies with application appropriate for diverse problems. the course will critically examine how these techniques can be adapted in different cultures where different interpersonal dynamics and values may exist.

Cr. 3.

HSRV 201 - Clinical in Case Study Method I

This is the first of two courses which will provide the student with field opportunities in an approved field instruction site that provides structured learning opportunities for the student to demonstrate human services foundational knowledge, professional standards, and practice competencies required of an entry-level human services worker. An agency supervisor and a faculty member supervise students as they complete the required 160 hours of field work. The classroom component relates theory and principles of practice to agency field-study experience. Through group interaction, discussion, and analysis, students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients.

Preparation for Course

P: HSRV 200.

Cr. 2.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

HSRV 251 - Clinical in Case Study Method II

This is the second of two courses which will provide the student with field opportunities in an approved field instruction site that provides structured learning opportunities for the student to demonstrate human services foundational knowledge, professional standards, and practice competencies required of an entry-level human services worker. An agency supervisor and a faculty member supervise students as they complete the required 160 hours of field work. The classroom component relates theory and principles of practice to agency field-study experience. Through group interaction, discussion, and analysis, students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients.

Preparation for Course

P: HSRV 201.

Cr. 2.

HSRV 315 - Introduction to Theories and Therapies

Discusses specific theories and therapies that are essential for human service professional practice. This course also provides knowledge that is required to pass the Indiana certification examination for addiction counselors.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 320 - Case Methods

This course will provide theoretical knowledge of techniques in case management related to human service clients and agencies. Case management with a wide range of populations will be discussed.

Preparation for Course

P: 100, 105.

Cr. 3.

HSRV 330 - Psychopharmacology for Human Services

An overview of the effects and side effects of psychiatric medications. Focus of the course will be knowledge useful in identifying 1) whether or not a client is responding to pharmacological treatment and 2) client behaviors indicating adverse effects of medication that should be reported to the client's healthcare provider.

Preparation for Course

P: PSY 350.

Cr. 1.

HSRV 400 - Internship I

This course will provide experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of case management skills including intake, client assessment, and development and implementation of intervention plans. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 315, 320; P or C: 401.

Cr. 1-4.

(Fall only)

HSRV 401 - Internship Seminar I

This course will focus on professionalism, ethical issues, and social welfare policy as applied with human service clients and agencies. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

C: HSRV 400.

Cr. 1.

(Fall only)

HSRV 450 - Internship II

This course will provide advanced experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of program evaluation, legal implications related to human service practice, and management issues related to directing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 451.

Cr. 2-4.

(Spring only)

HSRV 451 - Internship Seminar II

This course will provide a forum for discussion of advanced theories and skills applicable to developing, assessing, and managing human service agencies. Topics will include program evaluation, legal implications related to human service practice, and management issues related to implementing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 450.

Cr. 1.

(Spring only)

Required supporting courses Credits: 33

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(Grade of C or better)

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

(Grade of C or better for the following courses.)

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S352 - Methods of Social Research

Introduction to methods of sociological research. Topics covered include qualitative and quantitative research methods, research design and implementation, experiments, survey research techniques, field research techniques, data collection, data analysis, and the ethical concerns of social research.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

(Fall only)

And

Two Sociology electives - one 300/400 level Cr. 6.

Choose from the following Credits: 3

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

Choose from the following Credits: 3

Course must be completed with a grade of C or better.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

(Either PSY 235 or PSY 369 may be taken for credit, NOT BOTH)

Choose from the following Credits: 3

Course must be completed with a grade of C or better.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Human Service Concentration Credits: 24

Student works with advisor to identify a group of courses from human services and related disciplines that support a concentration in such areas as addictions, psychiatric rehabilitation, gerontology, child/adolescent services, activity/recreational therapies, and developmental disabilities. These courses prepare students to graduate with knowledge and skills directly applicable to their chosen area of interest within the human services profession.

Students' must complete 12 credits in concentration Area A and 12 credits in concentration Area B. See your academic advisor for approval of your chosen concentration areas and for approval of courses under each concentration area.

Concentration Area A (12 CR.)

Students will choose a concentration in one of the following areas: Business and Administration, Communications and Public Relations, Computers and Technology, Divinity, Early childhood Education, Ecology, Ethics, Ethics and Cultural Studies, Homeless, International Studies, Marketing and Fundraising, Medical and Healthcare, Missionary

Work, Peace Studies, Political Science, Professional Writing, Public Affairs, Sign Language, Teaching English as a New Language or Women's Studies.

Concentration Area B (12 CR.)

Students will choose a concentration in one of the following areas: Adolescents, Children, Disabled and Special Needs, Diversity, Domestic Violence and Gender Roles, Family, Health and Well Being, Justice System, Leadership and Management, Gerontology, Spanish, or Substance Abuse.

Industrial Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
 - Technical expertise in quality, meteorology, advanced SPC, SQC, TQM, ISO standards, and design of experiments.
 - Technical expertise in ergonomics, work methods design, optimization, engineering economy, and cost estimating.
 - Technical expertise in facilities layout, production planning and control, queuing theory, modeling, and simulation.
 - Technical expertise in CAD, engineering graphics, GD&T, gage capability studies, and measurement uncertainty.
 - Technical expertise in materials, manufacturing processes, design for manufacturing and assembly, and CNC machining.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of systems, components or processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems.
- An ability to communicate effectively.
 - An ability to communicate effectively through oral presentation.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues related to the profession.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, technical, analytical, and managerial skills necessary to develop, implement, and improve integrated systems in manufacturing and service industries that include people, materials, equipment, information, and energy. Graduates will be prepared for careers in higher levels of system design, integration, and management. To earn the B.S. with a major in industrial engineering technology, you must fulfill the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and of the A.S., and complete the following credits, earning a grade of C or better in those courses that serve as prerequisites:

IPFW General Education Requirements

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

Required Core and Concentration (Major) Courses

IET 304 - Advanced Metrology

Variable and attribute gage capability studies; measurements and calculations of repeatability, reproducibility, bias, stability, and linearity; measurement uncertainty; traceability to NIST standards; inspection of parts using GD&T callouts.

Preparation for Course

P: 204, MET 223.

Cr. 3.

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

IET 362 - Technological Optimization

An introduction to linear programming applied to optimization in a manufacturing environment.

Preparation for Course

P: 105, MA 159.

Cr. 3.

Hours

Class 3,

IET 369 - Manufacturing Simulation

An introduction to computer simulation of complex manufacturing systems.

Preparation for Course

P: 105, STAT 301, CS 114.

Cr. 3.

Hours

Class 3,

IET 401 - Manufacturing Process Planning

Analysis and planning of common production processes.

Preparation for Course

P: MET 104, MET 335.

Cr. 3.

Hours

Class 3,

Grade of C or better required

IET 454 - Statistical Process Control

Online process control including design and analysis of process control charts and sampling plans.

Preparation for Course

P: 204, STAT 301.

Cr. 3.

Hours

Class 3,

IET 480 - Cost Estimating and Design

Economic design of manufacturing systems. Includes a capstone project.

Preparation for Course

P: 204, 267, 310, 401; senior status.

Cr. 3.

Hours

Class 0-5, Lab. 0-9,

MET 300 - Applied Thermodynamics

The fundamentals of thermodynamics including application of the first and second laws, enthalpy, entropy, reversible and irreversible processes.

Preparation for Course

P: MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

MET 347 - Programming of Automation Systems

A study of programming on computer numerical control systems, including tool geometry compensation, coordinate transformation, and macros for developing canned cycles; and study of geometric and kinetic characteristics of industrial robots, end-effectors, sensors, applications, programming and safety.

Preparation for Course

P: ECET 114, PHYS 219, MET 223, 335; and ENG W234.

Cr. 3.

Hours

Class 2, Lab. 3,

Additional Required Technical Courses

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECET 211 - Electrical Machines and Controls

Lecture, demonstration, and laboratory experiments are combined to acquaint the student with the elements of electrical power circuits and machines.

Preparation for Course

P: MA 154.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Notes

Course not open to EET students.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Additional Required Support Courses

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Additional Core and Concentration (Major) Electives

- Any two courses from IET or MET or a course approved by an IET advisor Credits: 6

Total including 64 from A.S. Credits: 128

Information Systems (B.S.)

Program: B.S.

Department of Computer & Electrical Engineering Technology & Information Systems

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- An ability to function effectively on teams to accomplish a common goal.
- An understanding of professional, ethical, legal, security and social issues and responsibilities.
- An ability to communicate effectively with a range of audiences.
- An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- Recognition of the need for and an ability to engage in continuing professional development.
- An ability to use current techniques, skills, and tools necessary for computing practice.
- An understanding of processes that support the delivery and management of information systems within a specific application environment.

The Bachelor of Science in Information Systems prepares you for a career as a computer professional as well as for possible graduate study.

The CEIT department also offers the Associate of Science with a major in information systems, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in electrical engineering technology. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

In addition to satisfying the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4), you must complete the courses required for the A.S. with a major in information systems (see above) and the following additional courses. Only courses in your major field for which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites. A maximum of 10 credits of D grades (including any from the A.S. program) will be accepted in other courses.

- Credits in approved second course in business or economics Credits: 3
- Credits in approved advanced communication course Credits: 3
- Additional credits in approved electives Credits: 10

IPFW General Education Requirements Credits: 12

Area II—Natural and Physical Sciences Credits: 3

*See Part 2 General Education Requirements for approved courses
(may be fulfilled by courses satisfying other requirements)*

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses Credits: 18

CS 364 - Introduction to Database Systems

Theory and application of database systems for information organization and retrieval based on the relational model. Includes database models, query languages, data dependencies, normal forms, and database design. Projects include use of commercial mainframe and microcomputer database software.

Preparation for Course

P: CS 260.

Cr. 3.

CS 365 - Advanced Database Systems

The first part of the course includes theory of SQL, implementation of some components of DBMS, and a comprehensive project. The second part of the course includes more advanced topics such as recovery; concurrency; and distributed, deductive, and knowledge databases.

Preparation for Course

P: CS 364.

Cr. 3.

IST 366 - Structured Analysis Techniques

Methods used in analyzing information systems. Topics include user interviewing and observation, event analysis, data flow diagrams, data dictionaries, mini-specifications, decision trees, decision tables, and both logical and physical models. Students practice these techniques in a major structured analysis project resulting in a requirements specification document.

Preparation for Course

P: CS 260 and ENG W234.

CR. 3.

IST 367 - Structured Design Techniques

Methods used in designing information systems. Topics include structure charts, module specifications, pseudocode, coupling, cohesion, transform analysis, transaction analysis, and user interface design. Includes the detailed design of an information system and the implementation of prototype of that design.

Preparation for Course

P: IST 366 or CS 366.

Cr. 3.

IST 466 - Strategic Issues for Information Systems

Topics in information systems management including strategic planning for competitive advantage, chargeback, systems portfolio risk analysis, security, and assimilating technology advances. Students develop an information systems strategic plan.

Preparation for Course

P: IST 366 or CS 366.

Cr. 3.

IST 467 - Project Management

Covers the techniques required to manage systems development. Topics include project proposal, planning, estimating, organizing, controlling, and completion. Students practice these techniques on a major project using project management software.

Preparation for Course

P: senior standing either in IS or IST or CS and ENG W234.

Cr. 3.

Supporting Courses Credits: 24

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course
Undergraduate-Graduate

Approved Second Course in Business or Economics Credits: 3

Approved Advanced Communication Course Credits: 3

Approved Advanced Electives (CS, BUS, ECON, OR MA) Credits: 9

Elective Credits: 6

Approved Elective Credits: 6

Total Including 64 from A.S. Credits: 124

Interior Design (B.S.)

Program: B.S.

**Department of Manufacturing & Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 229 ~ 260-481-6797 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- Students are able to advance their learning.
 - Be able to interact with multiple disciplines
 - Have exposure to a variety of business
 - Have opportunities for design work experience
- Students have the attitudes, traits, and values of professional responsibility, accountability, and effectiveness.
 - Have professional ethics and the role of ethics in the practice of interior design.
 - Have environmental ethics and the role of sustainability in the practice of interior design.
 - Have a global perspective and approach to thinking and problem solving.
 - Have critical, analytical, and strategic thinking abilities.
 - Be able to have creative thinking (exhibit a variety of ideas, approaches, concepts with originality and elaboration).
 - Have the ability to think visually and volumetrically.
 - Have professional discipline skills (for example, time management, organizational skills).
 - Have active listening skills leading to effective interpretation of requirements .
- Students have a foundation in the fundamentals of art and design; theories of design, green design, and human behavior; and discipline-related history.
 - Be able to utilize design elements (for example, space, line, mass, shape, texture) and principles (for example, scale, proportion, balance, rhythm, emphasis, harmony, variety).
 - Be able to utilize color principles, theories, and systems (for example, additive and subtractive color; color-mixing; hue, value, and intensity; the relationship of light and color).
 - Be able to utilize theories of design and design composition.

- Understanding principles of lighting design (for example, color, quality, sources, use).
 - Understanding of theories of human behavior in interior environments.
 - Understanding of principles and theories of sustainability.
 - Understanding of the history of art, architecture, interior and finishes.
- Students understand and apply the knowledge, skills, process, and theories of interior design.
 - Apply 2-dimensional design elements and principles in interior design projects.
 - Apply 3-dimensional design elements and principles to the development of the spatial envelope (for example, volumes of space, visual continuity and balance, visual passages, interconnecting elements).
 - Select and apply color in interior design projects.
 - Have programming skills.
 - Have competent schematic design, concept development, and problem solving skills.
 - Have competent design development skills.
 - Have competent skills in preparing drawings, schedules, and specifications as an integrated system of contract documents, appropriate to project size and scope and sufficiently extensive to show how design solutions and interior construction are related.
 - Have design development skills.
- Students communicate effectively.
 - Be competent in drafting and lettering, both manual and computer-aided techniques.
 - Be competent in illustrative sketching.
 - Be competent in presentation of color, materials, and furnishings (for example, sample boards, collages, mock-ups, digital representations).
 - Be able to express ideas clearly in oral presentations and critiques.
 - Be able to communicate clearly in writing (using correct spelling, grammar, and syntax) in specifications, schedules, and contracts and other business-related documents such as project programs, concept statements, reports, research papers, resumes, and correspondence.
 - Be able to render by any medium, manual or computer-generated, that successfully communicates the design intent.
 - Be able to communicate 3-dimensional space and form, such as in perspectives, pralines, and models (computer-generated or manual).
 - Have the ability to apply the metric system to design work.
 - Be able to communicate through alternative presentation techniques (for example, audio, electronic, film, photography, slides, video).
- Students are able to design within the context of building systems. Students are able to use appropriate materials and products.
 - Understanding that design solutions affect and are impacted by construction system and method, mechanical, electrical, plumbing/HAVC and other systems.
 - Be able to select and apply materials and products appropriately on the basis of their properties and performance criteria.
 - Have the knowledge of sources for materials and products.
 - Understanding of the concept of sustainable building methods and materials.
 - Have the knowledge of installation methods (for example, carpet, resilient flooring, wall covering).
 - Understanding material maintenance requirements.
- Students are able to apply the laws, codes, regulations, standards, and practices that protect the health, safety, and welfare of the public.
 - Understanding of the impact of fire and life safety principles on space planning.
 - Have the ability of appropriate application of codes and regulations, barrier-free design guidelines, ergonomic and human factors data.
 - Understanding of the impact on health and welfare of indoor air quality, noise and lighting.
 - Demonstrate understanding of universal design concepts and principles.
- Students have a foundation in business and professional practice.
 - Understanding of project management practices.

- Have the knowledge of certification, licensing, and registration requirements and professional design organizations.
- Understanding of basic business computer applications (for example, word processing, spreadsheets).
- Have the knowledge of business processes (for example, marketing, strategic planning, and accounting procedures).

This program prepares graduates to work as interior design professionals providing creative and project management services for a variety of clients including homeowners, business owners, institutions, manufacturers, and those planning special events. This program will be open to those who have completed an associate degree in interior design. Program elective courses allow students to develop a specialty area in theatre design or commercial equipment and kitchen design. Through the three-course senior design requirement, students will graduate with a specialty in one of the following areas: residential design, special populations - aging, healthcare design, education design, hotel design, restaurant design, or corrections design.

To earn the B.S. with a major in interior design, you must satisfy the requirements of IPFW (see Part 8), the College of Engineering, Technology, and Computer Science (see Part 4), and the A.S. degree program. You must earn a grade of C or better in each required INTR course, and complete the requirements listed below:

IPFW General Education Requirements

Area II—Natural and Physical Sciences Credits: 3

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Core and Concentration (Major) Courses (36 credits)

- Interior Design Electives Credits: 6
(department-approved courses)
- Interdisciplinary Design Topic Credits: 3
(department-approved courses)
- Leadership/Communication Elective Credits: 3
(department-approved courses)

INTR 306 - Interior and Furniture Styles I

All courses in historical interiors and furniture styles include slides or photographs of each period. Each student will be required to keep a notebook. I. Historical interiors and furniture styles of the ancient world: Egyptian, Greek, Roman, Byzantine, Romanesque, Gothic, and 15th, 16th, and 17th centuries of Renaissance Europe.

Preparation for Course

P: 220.

Cr. 3.

INTR 307 - Interior and Furniture Styles II

All courses in historical interiors and furniture styles include slides or photographs of each period. Each student will be required to keep a notebook. Historical interiors and furniture styles of the 18th, 19th, and 20th centuries in France, England, and the United States.

Preparation for Course

P: 306.

Cr. 3.

INTR 308 - Contract Interior Design I

An environmental study of the principles of commercial/institutional design with special emphasis on sociophysiological factors relating to the design elements of individual contract projects.

Preparation for Course

P: Junior standing in the INTR program; INTR 112.

Cr. 3.

INTR 309 - Contract Interior Design II

The development and application of spatial concepts through the design of a commercial/institutional interior project. Incorporates contents of all prerequisite courses. Presentation techniques will be emphasized.

Preparation for Course

P: 308 and VCD P476.

Cr. 3.

INTR 400 - Interior Design Studio I

The course emphasizes development of a functional need program, and design of complex interior spaces, with special consideration of psychological aspects of spatial components. Studio projects will be chosen from the following list: residential design, special population - aging; healthcare design, education design, hotel design, restaurant design, or corrections design.

Preparation for Course

P: INTR 241, INTR 309, and INTR 402.

Cr. 3

INTR 402 - Professional Practice

The study of professional office and business procedures for the practice of interior design. Includes public relations, marketing, legal, accounting and financial considerations, professional organizations and conduct, resourcing, project management, contracts, forms, and documents.

Preparation for Course

P: INTR 308, ENG W232.

Cr. 3.

INTR 404 - Interior Design Practicum

Special problems in planning, furnishing, design, crafts, or work-study.

Preparation for Course

P: INTR 400, ENG W232, and OLS 342.

Cr. 3.

Supporting Courses

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

OLS 342 - Interviewing Strategies in Organizations

A study of the various interviews supervisors conduct in organizational settings. This course focuses on general interviewing principles as well as specific types of interviews including selection, information gathering, disciplinary, and performance appraisals.

Preparation for Course

P: OLS 252 and COM 114

Cr. 3.

VCD P476 - Three-Dimensional Computer Modeling

Concentration on three-dimensional modeling and environments - object building and manipulation, lighting, atmosphere, and surface mapping. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

Total Credits: 60

Interpersonal and Organizational Communication (B.A.)

Program: B.A.

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

The student learning outcomes for the degree are as follows:

- Identify and explain the elements for effective communication.
- Demonstrate successful communication, both orally and in writing.
- Communicate effectively interpersonally and in groups.
- Evaluate interpersonal and group interactions.
- Articulate explain theories of nonverbal, interpersonal, small group and organizational communication.

This program helps you understand human communication and develop skill and sensitivity in speaking, listening, and participating in varied communication situations. Courses focus on theory and practice in communication tasks ranging from interviewing to addressing large audiences. The degree program helps you prepare for a career in government, sales, public relations, law, public and social service, personnel, or business and industrial communication.

The Department of Communication offers related bachelor's degree programs in media and public communication and a minor in media production for those students who want more courses in practical skills.

To earn the B.A. with a major in interpersonal and organizational communication, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Communication as listed

below. You also must earn a minor in an appropriate discipline. Two courses in a major offered in the Department of Communication can also be counted in the required minor. If the minor is selected from an Arts and Sciences department, the courses may be used to satisfy distribution requirements in the College of Arts and Sciences.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundation

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of following Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- *Additional credits (Not in COM) in Area III Credits: 3*

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational

broadcasting, and audience analysis.

Cr. 3.

Credits: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses (not in COM)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses (not in COM)

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in COM)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

2.0 required in all courses in the major.

COM 120 - Introduction to Communication Technology and Communication Fields

This is the first of a series of three, one credit courses that all Communication majors at IPFW entering Fall 06 and after are required to take. The applied portion of this course will introduce students to technology and software that is desirable for communication professionals. This course will also provide students with an overview of the general fields to which their degree will most likely lead them.

Cr. 1.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 308 - Applied Communication

This course explores the varied fields of communication. Students will be exposed to varied fields where they may utilize their degree. Students will also learn and practice job-seeking skills including job search, resume and cover letter preparation, and interviewing protocol and skill.

Preparation for Course

P: COM 120.

Cr. 1.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 320 - Small Group Communication

A study of group thinking and problem-solving methods; participation in and evaluation of committee and informal discussion groups. Focus on the roles, networks, and messages employed by small group communicators.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

COM 480 - Senior Seminar in Communication

This course is designed as a capstone for the communication major. It will require students to demonstrate proficiency in oral, written, and mediated communication. Students will synthesize their knowledge of communication theory and content.

Preparation for Course

P: COM 120.

Cr. 1.

Credits from among the following: 9

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 310 - Family Communication

Application of theories of interpersonal communication to family life. Emphasis on feedback, empathy, and trust as contributing factors to effective communication with families. A case study approach is used.

Preparation for Course

P: 114.

Cr. 3.

COM 325 - Interviewing: Principles and Practice

Theory and practice of methods in selected interview settings: informal, employment, and persuasive. Emphasis on communication between two persons, questioning techniques, and the logical and psychological bases of interpersonal persuasion.

Preparation for Course

P: 114.

Cr. 3.

COM 410 - Gender Roles and Communication

This course is designed to investigate the relationship between gender roles and communication; i.e., how gender roles are socially constructed, maintained, and enacted. The course also explores gender differences, similarities, and gender issues in personal and organizational contexts.

Preparation for Course

P: 114.

Cr. 3.

COM 471 - Communicating Peace

Examines the processes by which peace and/or violence are constructed at all communicative levels (intrapersonally, ideologically, and internationally) through face-to-face and mediated communication channels. Students gain an understanding of how we use and misuse communication processes to create peace and/or violence and learn skills for communicating peace.

Preparation for Course

P: 114.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as

photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.

Credits from among the following: 6

COM 507 - Introduction to Semiotics

The study of languages, literatures, and other systems of human communication. Includes a wide range of phenomena that can be brought together by means of a general theory of signs. The course deals with three fundamental areas: 1) verbal communication, 2) nonverbal communication (iconic systems, gestures, body language, etc.), and 3) communication through art forms.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 508 - Nonverbal Communication in Human Interaction

An examination of theoretical writings and critical studies in selected areas of nonverbal communication, e.g., environmental influences, space and territory relationships, physical appearance and dress, physical behavior, and vocal cues. One unit will specifically concern itself with measurement, recording, or transcription methods used in nonverbal study.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 512 - Theories of Interpersonal Communication

Review of contemporary theories, analysis of concepts, models, and pertinent research across the broad spectrum of interpersonal communication.

Preparation for Course

P: COM 212 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 516 - Analysis of Persuasive Messages

An examination of the ideational, structural, linguistic, and philosophical dimensions of persuasive messages. Emphasis on theoretical and practical components of contemporary persuasion.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 518 - Theories of Persuasion

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 520 - Small Group Communication

Survey and critical evaluation of theoretical and empirical literature dealing with human communication within small group settings.

Preparation for Course

P: COM 320 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 523 - Communication in Personal Relationships

Explores the initiation, development, maintenance, and deterioration of family, friend, and romantic relationships. Explores relational phenomena, such as communication and gender differences, computer-mediated relationships, attraction, relational culture, and stages of dissolution.

Preparation for Course

P: COM 212.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 525 - Advanced Interviewing

Application of modern communication theory to interview situations with emphasis upon problems involving superior-subordinate relations, information-getting, and interpersonal misunderstanding. Classroom demonstrations based upon real-life cases, supplemented by off-campus interviews; practice in briefing techniques.

Preparation for Course

P: 325 or equivalent.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 574 - Organizational Communication

Survey of the theoretical and empirical literature dealing with human communication behavior as it occurs within the context of complex organizations. Among topics covered are superior-subordinate communication, communication networks, message distortion, feedback processes, internal corporate mass media, managerial-communication climate, semantic and stylistic dimensions of messages, and communication in decision making.

Preparation for Course

P: COM 324 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Minor and Elective Courses

- Credits in approved minor (with grades of C or higher) Credits: 12–21
- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Labor Studies (B.S.)**Division of Labor Studies****Program Offered: B.S.L.S.**

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the Bachelor of Science in Labor Studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses.

Program Requirements

Credits from the Labor Studies Core Credits: 15

Additional Credits in Labor Studies Courses Credits: 27

Required Areas of Learning

Labor Studies is a university-wide degree program, certified through Indiana University's School of Social Work. The program follows the same curriculum requirements throughout Indiana University.

Arts and Humanities (12 Credits)

- Afro-American Studies
- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Film
- Fine Arts
- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Religion
- Theatre
- Visual Communication and Design

Science and Mathematics (15 Credits)

- Credits in Computer Science required Credits: 3
- Credits from at least two different subjects from the courses listed Credits: 12
- Astronomy
- Biology
- Chemistry
- Computer Science (includes BUS K211, K212, K213, K215, and K216)
- Entomology
- Forestry and Natural Resources
- Geology
- Horticulture
- Mathematics (except 109, 111, and 113)
- Physics
- Statistics

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E445 - Medical Anthropology

An examination of the cross-cultural properties of disease and curing. Focus on investigations into the ideology and meaning of illness, the relationship between patient and healer, and how responsibility for illness is assigned. Medical anthropology is concerned with knowledge about sociocultural contexts of disease and healing and with how such knowledge might inform the management of our own health problems.

Cr. 3.

Session Indicators

(spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 310 - Sensory and Perceptual Processes

Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Social and Behavioral Sciences Area of Learning Credits: 12

- Credits in economics is required (ECON E200 or E201 recommended), L230 meets requirement.
- Credits from at least two different subjects below Credits: 9
- Anthropology
- Economics
- Geography
- Linguistics
- Psychology

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and

contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Additional Credits from One Area of Learning Credits: 12

Electives Credits: 27

Note

You must earn a minimum of 20 credits after admission to labor studies and may apply toward the degree no more than 21 credits in a single subject other than labor studies. At least 30 of your credits must be in 300/400-level courses, including at least 12 credits in labor studies courses. You must complete at least 24 credits while enrolled as an IU student.

Total Credits: 120

Mathematics (B.S.)

Program Offered: B.S.

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students who complete the undergraduate mathematics major should be able to reason mathematically and should be good problem solvers. Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g. physics, engineering, and business.
- In addition to 1. above, students who complete the Mathematics option should understand the fundamental concepts in algebra and analysis. They should understand the value of mathematical proofs and should be able to do simple proofs.
- In addition to 1. above, students who complete the Actuarial Science option should have had sufficient preparation in calculus, linear algebra, probability, and statistics to pass the preliminary Actuarial Science examinations.
- In addition to 1. above, students who complete the Mathematics Teaching option should have mastered the fundamental concepts necessary to obtain certification to teach mathematics in the secondary schools.

Programs leading to the Bachelor of Science help you prepare for employment in business and industry, teaching in secondary schools, or study for advanced degrees. As a mathematics major you choose one of six options: actuarial science, business, computing, mathematics, mathematics teaching, or statistics.

To earn a B.S. with a major in mathematics, you must satisfy the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Mathematical Sciences. Required course work appears below.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- MA The quantitative-reasoning requirement is satisfied by mathematics courses below. Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

See Part 2 General Education Requirements for approved courses

- Includes two laboratory courses (*The science courses must be selected from a list approved by the department.*) Credits: 11

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in MA) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

Of the mathematics courses numbered below 261, only 165, 166, and 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted. You must have a grade-point average of 2.0 or better with at most one passing grade less than 1.5 in courses used to fulfill the major requirements.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o.

Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Choose one of the following:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Option Courses (see below) Credits: 46–56

General Elective Courses

- Sufficient additional credits, if necessary, to bring the total to 124

Total Credits: 124

Actuarial Science Option

This option, designed in consultation with professionals from the insurance industry, includes courses that help you prepare for a variety of positions in that field. In particular, it helps you prepare for the first of the series of examinations by the Society of Actuaries. Additional information is available from the department.

- Credits in three electives selected from a list of courses approved by the department Credits: 9
- Credits in electives (two additional finance courses, BUS F302 and F420 highly recommended) Credits: 13-

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

(before enrolling in F301, you must complete the following with grades of C or better: BUS A201-A202, CS 160, ECON E201-E202, MA 165, and STAT 511)

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers

and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Business Option

This option is designed for students who plan to pursue a career in business or industry. In addition to obtaining useful mathematics and statistics tools, the student who completes this option will also receive a minor in business.

Option Specific Courses Credits: 21

- Credits in courses selected from a departmentally approved list (MA 363, 417/418, 441, 453, 511, 525, STAT 514, 517) Credits: 6

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Business Minor Credits: 22

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(counted as a general education course in Area III)

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

Credits in two courses selected from the following list Credits: 6

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

General elective courses Credits: 10–13

Total Credits: 53-56

Computing Option

This option helps you prepare for computer-related careers for which a strong mathematical background is advantageous. The student who completes this option will also receive a minor in computer science.

Option Specific Courses Credits: 15

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

One of the following Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

One of the following Credits: 3

MA 441 - Real Analysis

The theory of functions of a real variable; continuity, theory of differentiation and Riemann integration, sequences and series of functions, uniform convergence, interchange of limit operations.

Preparation for Course

P: MA 305 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 556 - Introduction to the Theory of Numbers

Divisibility, congruences, quadratic residues, Diophantine equations, the sequence of primes.

Preparation for Course

P: MA 263 or 261.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Two of the following Credits: 6

- MA 441, 453, 511, 556, 575, STAT 511, or STAT 516 if not taken to satisfy above requirements.

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

MA 417 - Mathematical Programming

This course is appropriate for majors in engineering, computer science, and mathematics. Construction of linear programming models; the simplex methods and variants, degeneracy and uncertainty in linear programming, gradient methods, dynamic programming, integer programming, principles of duality; two-person zero-sum, nonzero-sum, n-person, and cooperative games.

Preparation for Course

P: MA 261 or 263 and one of: 262, 351 or 511 with grades of C- or better.

Cr. 3.

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science Minor Credits: 22

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 331 - Introduction to C++ and Object-Oriented Programming

An introduction to the C++ language with emphasis on features supporting object-oriented programming. Fundamental data type and operations. Expression evaluation. Selection and iteration constraints. Functions, procedures, and macro. Standard libraries. Classes: declaration and definition; instances; member functions; constructors and destructors; function overloading; inheritance and polymorphism. Stream input and output. Using classes to encapsulate data

structure and implementation details.

Preparation for Course

P: CS 260.

Cr. 3.

Two of the following Credits: 6

- Select two courses from a departmentally approved list Credits: 6
- Credits in electives: 16–19

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

CS 486 - Analysis of Algorithms

Techniques for analyzing the time and space requirements of algorithms and problems. Application of these techniques to sorting, searching, pattern-matching, graph problems, and other selected problems. Brief introduction to the intractable (NP-hard) problems.

Preparation for Course

P: CS 260 and MA 166.

Cr. 3.

CS 488 - Theory of Computation

Mathematical models of computation including finite and pushdown automata and Turing machines and equivalence of different general-purpose models. Grammars and their relation to automata, Church's Thesis, and limits of computation.

Preparation for Course

P: CS 350.

Cr. 3.

CS 543 - Introduction to Simulation and Modeling of Computer Systems

Simulation: discrete event simulation, process-oriented simulation, generating random numbers, simulation languages, simulation examples of complex systems. Nondeterministic models: random variables, Poisson process, moment generating functions, statistical inference and data analysis. Modeling: elementary queuing models, network of queues, applications to performance evaluation of computer systems.

Preparation for Course

P: STAT 511 or equivalent.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

CS 572 - Heuristic Problem Solving

Design and development of heuristic problem-solving systems. The emphasis is on the development of general data representations, heuristics, and problem-solving strategies that can be applied to wide classes of problems. The task areas explored include game playing, theorem proving, pattern recognition, semantic information processing, cognitive psychology, design synthesis, robotology, and integrated artificial intelligence systems.

Cr. 3.

Dual Level Course

Dual Level, Undergraduate-Graduate

Total Credits: 53-56

Mathematics Option

This option helps you prepare for graduate study in the mathematical sciences or for work in fields where a strong mathematical background is required.

Program Requirements**MA 305 - Foundations of Higher Mathematics**

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

MA 441 - Real Analysis

The theory of functions of a real variable; continuity, theory of differentiation and Riemann integration, sequences and series of functions, uniform convergence, interchange of limit operations.

Preparation for Course

P: MA 305 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

One of the following Credits: 3

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 31–34

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 52-55

Mathematics Teaching Option

This option provides the mathematical preparation necessary for teaching secondary-school mathematics in Indiana. You are encouraged to choose and complete a teaching minor.

Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The Praxis II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Information on additional requirements for teacher certification is available in the department office.

Program Requirements

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following Credits: 3

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 34–37

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 52–55

Statistics Option

This option helps you prepare for careers in business and industry and emphasizes the statistical methods used in decision making. It also provides entry-level preparation for an actuarial career.

Program Requirements

- Credits in courses selected from a departmentally approved list Credits: 6
- Credits in electives: 31–34

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 514 - Design of Experiments

Fundamentals, completely randomized design; randomized complete blocks; latin square; multi-classification; factorial; nested factorial; incomplete block and fractional replications for $2n$, $3n$, $2m \times 3n$; confounding; lattice designs; general mixed factorials; split plot; analysis of variance in regression models; optimum design. Use of existing statistical programs.

Preparation for Course

P: STAT 512 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 517 - Statistical Inference

A basic course in statistical theory covering standard statistical methods and their application. Estimation including unbiased, maximum likelihood and moment estimation; testing hypotheses for standard distributions and contingency tables; confidence intervals and regions; introduction to nonparametric tests and linear regression.

Preparation for Course

P: STAT 516 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Note

The research certificate is described under Arts and Sciences in Part 3 of this Bulletin.

Total Credits: 52-55

Mathematics Teaching (B.S.)

Program: B.S.

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students who complete the undergraduate Mathematics Teaching major should be able to reason mathematically and should be good problem solvers. Students should understand the role mathematics has played in solving important problems in a variety of disciplines, e.g., physics, engineering, and business.
- Students who complete the Mathematics Teaching major should have mastered the fundamental concepts necessary to obtain certification to teach mathematics in the secondary schools.

The B.S. program provides the mathematical preparation necessary for teaching secondary-school mathematics in Indiana and is designed to meet standards for teacher certification. Information on additional requirements for teacher certification is available in the department office. You are encouraged to choose and complete a teaching minor.

To earn a B.S. with a major in mathematics teaching, you must satisfy the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Mathematical Sciences. Required course work appears below. (Note that you are not required to include foreign-language study.)

You should work closely with your academic advisor when choosing free electives and courses to meet the IPFW general-education requirements so as to ensure completion of the certification requirements set by the Indiana Professional Standards Board for teacher certification. Full information about teacher certification is available from the School of Education. To be certified, you must have a GPA of 2.00 or higher in the College of Arts and Sciences' general-education distribution areas of humanities and social and behavioral sciences. Additionally, you must have a GPA of 2.50 or higher in your teaching major of mathematical sciences and the professional education courses listed below and an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

- **MA** - The quantitative-reasoning requirement is satisfied by mathematics courses below. Credits: 0

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 11

See Part 2 General Education Requirements for approved courses

Includes two laboratory courses. (Science courses must be selected from list approved by the department.)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in MA) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses

Of the mathematics courses numbered below 261, only 165, 166, and 175 apply toward the degree; statistics courses must be numbered 490 or higher to be counted. You must have a grade-point average of 2.0 or better with at most one passing grade less than 1.5 in courses used to fulfill the mathematics concentration.

- Credits in courses selected from a departmentally approved list Credits: 6

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to

write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 263 - Multivariate and Vector Calculus

This course is primarily for students majoring in mathematics, but is appropriate for students majoring in engineering and the physical sciences who want a stronger background in vector calculus than is available in MA 261. Geometry of Euclidean space; partial derivatives, gradient; vector fields, divergence, curl; extrema, Lagrange multipliers; multiple integrals, Jacobian; line and surface integrals; theorems of Green, Gauss, and Stokes.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Hours

Class 4,

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements**EDUA F300 - Topical Exploration in Education**

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation

required.

Preparation for Course

P: W200.

Cr. 1-4.

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

EDUC M448 - Methods of Teaching High School Mathematics

Cr. 2-4.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

Sufficient additional credits to bring the total to 124. Some may be restricted depending on choices for general education requirements. You are encouraged to acquire a teaching minor (see School of Education for information).

Total Credits: 124

Mechanical Engineering (B.S.M.E.)

Program: B.S.M.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

The student learning outcomes for the electrical degree are as follows:

- Graduates will demonstrate basic knowledge in chemistry, mathematics, physics, and engineering

- Graduates will demonstrate the ability to identify, formulate, and solve mechanical engineering problems
- Graduates will demonstrate the ability to design and conduct experiments, interpret and analyze data, and report results
- Graduates will demonstrate the ability to design a mechanical system, component, or process that meets desired specifications and requirements
- Graduates will demonstrate the ability to function on engineering and science laboratory teams as well as on multidisciplinary design teams
- Graduates will use modern engineering software tools and equipment to analyze mechanical engineering problems
- Graduates will demonstrate an understanding of the professional and ethical responsibility
- Graduates will be able to communicate effectively in both verbal and written forms
- Graduates will have the confidence for self education and the ability for lifelong learning. They will have a broad education to understand the impact of engineering on society and demonstrate awareness of contemporary issues

Mechanical engineers deal with the design, analysis, testing, production, and utilization of all types of mechanical equipment. They are also involved in solving problems brought about by ever increasing demands from a growing world population. For example, mechanical engineers are looking for ways to control air pollution from combustion products and thermal pollution resulting from power plants (nuclear or fossil-fueled). They study noise pollution and how to suppress it; and they develop urban vehicles for efficient, safe, environmentally-friendly transportation. They design medical implants and aids such as stints and artificial knees. IPFW offers state-of-the-art knowledge in all areas of mechanical engineering such as thermal sciences, dynamic systems, and robotics.

To earn the B.S.M.E. at IPFW, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science (see Part 4); you must also complete the following courses:

IPFW General Education Requirements Credits: 36

Area I—Linguistic and Numerical Foundations Credits: 10

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 9**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- with the exception of IET 105

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 2

ENGR 120 - Graphical Communications and Spatial Analysis

The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Preparation for Course

P: MA 153.

Cr. 2.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

- with the exception of MA 314, PHYS 325, and STAT 340.

Freshman Engineering Credits: 6

ENGR 101 - Introduction to Engineering

Introduction to the profession of engineering. Focus is on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Assignments and projects are of a multidisciplinary nature.

Cr. 1.

ENGR 121 - Computer Tools for Engineers

Introduction to computer software for solving engineering problems. Emphasis on problem-solving techniques with applications of modern high-level structured programming languages and spreadsheets: algorithm development, looping techniques, files and data structures, solving linear algebraic equations, simple statistical analysis, and plotting techniques.

Preparation for Course

P: MA 154 or 159 (Cor better), placement; C: ENGR 120.

Cr. 2.

ENGR 199 - Introduction to Engineering Design

This course introduces the engineering design process as a heuristic approach. Techniques for defining problems, generating solutions and deciding between them are used to set up and solve design problems that are analyzed by students using fundamental engineering principles. Computer modeling of systems is introduced for use in design. Students learn both written and oral technical communication skills by presenting their engineering work and conclusions in the form of reports and oral presentations.

Preparation for Course

P: ENGR 101; C: ENGR 121, PHYS 152.

Cr. 3.

Core and Concentration (Major) Courses Credits: 50

ENGR 221 - C and C++ Programming for Engineers

Introduction to programming in C and C++ to solve engineering problems: integer and floating-point data, standard mathematics library, control structures, pointers, user-defined functions, arrays, input and output, classes.

Preparation for Course

P: ENGR 101, 121.

Cr. 2.

ME 200 - Thermodynamics I

First and second laws, entropy, reversible and irreversible processes, properties of pure substances, applications to engineering problems.

Preparation for Course

C: MA 261.

Cr. 3.

Hours

Class 3,

ME 250 - Statics

Forces and couples, free body diagrams, two- and three-dimensional equilibrium of a particle and rigid bodies. Principles of friction, centroids, centers of gravity, and moments of inertia. Virtual work, potential energy, and static stability of equilibrium. Internal forces, shear and bending moment diagrams.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 3.

Hours

Class 3.

ME 251 - Dynamics

Kinematics of particles in rectilinear and curvilinear motion. Kinetics of particles, Newton's second law, energy and momentum methods. Systems of particles. Kinematics and plane motion of rigid bodies, forces and accelerations, energy and momentum methods. Introduction to mechanical vibrations.

Preparation for Course

P: 250; C: MA 263.

Cr. 3.

ME 252 - Strength of Materials

Plane stress, plane strain, and stress-strain laws. Applications of stress and deformation analysis to members subjected to centric, torsional, flexural, and combined loading. Introduction to theories of failure, buckling, and energy methods.

Preparation for Course

P: ME 250.

Cr. 3.

ME 293 - Measurements and Instrumentation

Introduction to the theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. Experiments utilizing basic circuits and sensors are performed. Methods for recording, interpretation and presentation of experimental results are illustrated. Statistical and design of experiments are emphasized.

Cr. 2.

ME 301 - Thermodynamics II

Reversibility, availability, power cycles, and the conversion of heat into work; combustion, heat pumps, refrigeration, and air conditioning.

Preparation for Course

P: 200.

Cr. 3.

ME 303 - Material Science and Engineering

Concepts of materials science and their relevance to engineering design. Structure, properties, and uses of engineering materials. Strengthening methods and environmental effects.

Preparation for Course

P: CHM 115 and PHYS 251; C: ME 252.

Cr. 2.

ME 304 - Mechanics and Materials Laboratory

Experimental determination of mechanical properties of selected engineering materials. Experimental verification of assumptions made in ME 252. Use of strain measuring devices. Design of experiments.

Preparation for Course

P: 282, 303, C: 307.

Cr. 1.

ME 318 - Fluid Mechanics

Continuum hypothesis, velocity field, fluid statics, basic conservation laws for systems and control volumes, dimensional analysis and similitude, Euler and Bernoulli equations, Navier-Stokes equations, viscous flows, boundary-layer flow in channels and around submerged bodies, applications.

Preparation for Course

P: 200, 251, MA 363.

Cr. 3.

ME 319 - Fluid Mechanics Laboratory

Introduction to fluid mechanics laboratory and design of experiments, including experiments on flow patterns, velocity profile in an air pipe, wind tunnel calibration, draining of a tank, pipe friction, drag forces, boundary layer studies, falling ball experiments, and measurements of fluid properties.

Preparation for Course

P: 282, 318.

Cr. 1.

ME 321 - Heat Transfer

Fundamental principles of heat transfer by conduction, convection, and radiation; mass transfer by diffusion and convection. Application to engineering situations.

Preparation for Course

C: 318.

Cr. 3.

ME 322 - Heat Transfer Laboratory

Introduction to heat transfer laboratory and design of experiments. Experiments on measurements of temperature and thermal conductivity, transient heat conduction, convection, radiation, boiling, and heat exchangers.

Preparation for Course

P: 282, 321; C: 319.

Cr. 1.

ME 361 - Kinematics and Dynamics of Machinery

Position, velocity, and acceleration analysis and design of machine elements including n-bar linkages, cam followers, and gear trains. Dynamic force analysis and balancing of linkages; flywheels; introduction to cam dynamics.

Preparation for Course

P: ME 251, MA 363.

Cr. 3.

ME 369 - Design of Machine Elements

Application of principles of strength of materials to the design of typical mechanical components.

Preparation for Course

P: ME 252, 303, and 361.

Cr. 3.

ME 371 - System Dynamics and Introduction to Control

Introduction to mathematical modeling and response analysis of dynamic systems with mechanical, electrical, and fluid/thermal elements used in control systems. Concepts of analogous systems; transfer function, and state space formulation; analysis in time-domain; analysis in frequency-domain; introduction to modern control theory.

Preparation for Course

P: ME 251, 280, 281.

Cr. 4.

ME 387 - Electronics and System Engineering through Robotics

Introduction to robotics; microcontrollers, motion actuators, sensors, electric circuits and interference, electronic devices and interfacing, switch elements, electric ladder diagrams.

Preparation for Course

P: ECE 201, ENGR 199, PHYS 251, ME 251.

Cr. 3.

ME 388 - Electronics and System Engineering through Robotics Lab

Experiments in building, programming, and testing mobile robots; DC motors; shaft encoders and telemetry. Multidisciplinary mobile robot team projects involving mechanical, electrical, and computer engineering designs.

Preparation for Course

C: 387.

Cr. 1.

ME 487 - Mechanical Engineering Design I

The first course of a two-semester sequence of senior capstone design. Provides students with experience in the process and practice of mechanical component/system design from concept through final design. Emphasis on teamwork, project management, testing through simulation or prototype, oral and written communications.

Preparation for Course

P: 321 and 369.

Cr. 3.

ME 488 - Mechanical Engineering Design II

Continuation of ME 487.

Preparation for Course

P: ME 487.

Cr. 3.

Required Electrical and Computer Engineering Course Credits: 3

ECE 201 - Linear Circuit Analysis I

Volt-ampere characteristics for circuit elements; independent and dependent sources; Kirchhoff's laws and circuit equations. Source transformations; Thevenin's and Norton's theorems; superposition. Transient response of RC, RL, and RLC circuits. Sinusoidal steadystate and impedance, instantaneous and average power.

Preparation for Course

C: MA 261.

Cr. 3.

Mathematics and Science Requirements Credits: 19

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Technical Elective Courses Credits: 12

Students must select at least three courses from Group 1.

Group 1

ECE 382 - Feedback System Analysis and Design

In this course classical concepts of feedback system analysis and associated compensation techniques are presented. In particular, the root locus, Bode diagram, and Nyquist criterion are used as determinants of stability.

Preparation for Course

P: 301 or ME 375 or equivalent.

Cr. 3.

ME 421 - Heating and Air Conditioning I

Fundamentals of fluid flow and heat transfer. Comfort conditions. Psychometrics. Solar radiation. Design conditions. Heating and cooling loads. Ventilation. Air distribution. Fans and pumps. Duct design. Air conditioning system.

Preparation for Course

P: 321 and 322.

Cr. 3.

ME 424 - Design and Optimization of Thermal Systems

Application of the principles of thermodynamics, fluid mechanics, and heat transfer to the design of thermal systems with an emphasis on modeling, simulation, economic analysis, and optimization. Systems to be studied include heat exchangers, thermal storage devices, fluid machinery, pipes and ducts, and electronics cooling devices.

Preparation for Course

P: 301 and 321.

Cr. 3.

ME 425 - Intermediate Heat Transfer: Theory and Applications

Analytical study of conduction; energy and momentum equations in convective heat transfer and review of empirical relations; boiling and condensation; applications in heat transfer such as heat exchangers, refrigeration and freezing of foods, cooling of electronic equipment, and heating and cooling of buildings.

Preparation for Course

P: 321, 322.

Cr. 3.

ME 454 - Intermediate Dynamics with Computer Applications

Introduction to the advanced theories of dynamics and application of the digital computer as a tool in engineering design and analysis of structural members and machine components in motion.

Preparation for Course

P: 371.

Cr. 3.

ME 471 - Vibration Analysis

Introduction to simple vibratory motions such as damped and undamped free and forced vibrations, resonance, vibratory systems with more than one degree of freedom, Coulomb and hysteretic damping, transverse vibration of beams, torsional vibration, computation of natural frequencies and mode shapes, applications.

Preparation for Course

P: 251.

Cr. 3.

ME 480 - Finite Element Analysis

Introduction to the finite-element method through applications to problems in elasticity and heat transfer. Emphasis on one- and two-dimensional problems. Computer implementation.

Preparation for Course

C: 321 and 369.

Cr. 3.

- ME 505 Intermediate Heat Transfer Cr. 3
- ME 509 Intermediate Fluid Mechanics Cr. 3
- CE 570 Advanced Structured Mechanics Cr. 3
-

Other 5xx-level courses offered by the engineering department may be included in Group 1 with approval.
Note a course cannot be counted towards both an undergraduate degree and a graduate degree.

Group 2

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CS 321 - Introduction to Computer Graphics

This is an introductory course in computer graphics. This course introduces fundamental concepts of computer graphics technology and principles to create three-dimensional graphics. Fundamental graphics algorithms are discussed, as well as graphics programming, using a modern graphics standard. Students are expected to complete several programming assignments that implement fundamental computer graphics techniques in the Unix operating system environment.

Preparation for Course

P: CS 260.

Cr. 3.

or CE 418 Introduction to Systems Engineering Cr. 3

ECE 483 - Digital Control Systems - Analysis and Design

Modeling using state-variable representation in discrete-time and ztransfer function. Parameter determination. Extension of basic frequency domain approaches to digital systems design. Time domain design of discrete-time systems. Computational methods emphasized in the design. Basics of computer control.

Preparation for Course

P: 382.

Cr. 3.

ECE 595 - Selected Topics in Electrical Engineering

Formal classroom or individualized instruction on topics of current interest. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Dual Level, Undergraduate-Graduate

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 523 - Introduction to Partial Differential Equations

First-order quasi-linear equations and their application to physical and social sciences; the Cauchy-Kovalevsky theorem; characteristics, classification, and canonical form of linear equations: equations of mathematical physics; study of the Laplace, wave, and heat equations; methods of solution.

Preparation for Course

P: MA 261 or 263 and 363.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

MA 525 - Introduction to Complex Analysis

Complex numbers and complex-valued functions of one variable; differentiation and contour integration; Cauchy's theorem; Taylor and Laurent series; residues; conformal mapping; applications.

Preparation for Course

P: MA 263, 441 or 510.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

ME 373 - Numerical Methods for Engineers

Introduction to numerical methods for engineers. Topics include solution methods for nonlinear algebraic equations, sets of linear and nonlinear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical differentiation and integration, and techniques to solve ordinary and partial differential equations.

Preparation for Course

P: MA 262.

Cr. 3.

ME 497 - Mechanical Engineering Projects

Projects or special topics of contemporary importance or of special interest that are outside the scope of the standard undergraduate curriculum can be studied under the Mechanical Engineering Projects course. Interested students should seek a faculty advisor by meeting with individual faculty members who work in their area of special interest and prepare a brief description of the work to be undertaken in cooperation with their advisor.

Preparation for Course

P: Junior standing or higher required.

Cr. 1-6.

Variable Title

(V.T.)

ME 498 - Research in Mechanical Engineering I

Individual research projects for students with honors classification. Requires prior approval of, and arrangement with, a faculty research advisor.

Preparation for Course

P: honors classification.

Cr. 3.

ME 499 - Research in Mechanical Engineering II

Requires submission of a written thesis, public presentation, and oral defense of the research project.

Preparation for Course

P: ME 498 and honors classification.

Cr. 3.

Notes

Continuation of ME 498.

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

- SE 510 Introduction to Systems Engineering Cr. 3

SE 520 - Engineering Economics

Provides an overview of financial accounting principles and basic economic concepts that drive project selection, design, and development. Topics include the time-value of money, investment return, depreciation, budgeting, cash flow, risk, and cost management. The course will emphasize the linkage between project scope and cost management with special attention to cost estimation and earned-value cost management techniques.

Preparation for Course

P: senior or graduate standing in an engineering or science degree program.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 512 - Applied Regression Analysis

Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance, multiple comparisons, fixed and random factors, analysis of covariance. Use of existing statistical computer programs.

Preparation for Course

P: STAT 511 or 517 or 528 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Students must select at least three courses from Group 2. Other 5xx-level courses offered by the engineering department may be included in Group 2 with approval. Note a course cannot be counted towards both an undergraduate degree and a graduate degree.

Total Credits: 126

GPA Requirement

All engineering & technical elective courses must have a combined minimum GPA of 2.0

Mechanical Engineering Technology (B.S.)

Program: B.S.

Department of Manufacturing and Construction Engineering Technology and Interior Design

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of the appropriate ET program.
- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology.
- An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.
- An ability to apply creativity in the design of mechanical systems, mechanical components or manufacturing processes.
- An ability to function effectively on teams.
- An ability to identify, analyze and solve technical problems in mechanical engineering and engineering technology.
- An ability to communicate effectively.
- A recognition of the need for, and an ability to engage in lifelong learning.
- An ability to understand professional, ethical and social responsibilities.
- A knowledge of and respect for diversity, contemporary societal and global issues.
- A commitment to quality, timeliness, and continuous improvement.

This program prepares graduates with knowledge, problem-solving ability, and hands-on skills to enter careers in analysis, applied design, development, implementation, manufacturing, testing, technical sales, evaluation, or oversight of mechanical systems and processes.

To earn the B.S. with a major in mechanical engineering technology, you must fulfill the requirements of IPFW (see Part 8); the College of Engineering, Technology, and Computer Science (see Part 4); and the A.S., and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites:

- Technical expertise in engineering materials, statics, dynamics, strength of materials, fluid mechanics, fluid power, thermodynamics, heat transfer, and electronic control.
- Technical expertise in manufacturing processes, mechanical design, and computer-aided engineering graphics, engineering materials, automatic controls, industrial operations with added technical depth in manufacturing processes, computer-aided engineering graphics, mechanical design and engineering materials.
- Expertise in applied physics having an emphasis in applied mechanics plus fundamentals of electricity in physics and inorganic chemistry.

IPFW General Education Requirements

Area III—The Individual, Culture, and Society

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 3

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 6

See Part 2 General Education Requirements for approved courses

Required Core and Concentration (Major) Courses

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

MET 247 - Computer-Aided Tool and Fixture Design

Tool design methods; tooling materials and heat treatment; design of cutting tools; gage design; design of drill jigs and fixtures; tool design for NE and CNC machines; tool design on the CAD system. Term projects using the CAD system are required.

Preparation for Course

P: 223; C: 202.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 300 - Applied Thermodynamics

The fundamentals of thermodynamics including application of the first and second laws, enthalpy, entropy, reversible and irreversible processes.

Preparation for Course

P: MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

Grade of C or better required

MET 312 - Dynamics and Mechanisms

The slider crank, four-bar linkage and Scotch Yoke mechanisms along with cam and follower systems will be studied. Both the kinematics and dynamics of the mechanisms will be covered. Dynamic studies will include both Newton's Second Law and energy methods.

Preparation for Course

P: MET 201, 223, MA 227, PHYS 218.

Cr. 3.

Hours

Class 3,

MET 347 - Programming of Automation Systems

A study of programming on computer numerical control systems, including tool geometry compensation, coordinate transformation, and macros for developing canned cycles; and study of geometric and kinetic characteristics of industrial robots, end-effectors, sensors, applications, programming and safety.

Preparation for Course

P: ECET 114, PHYS 219, MET 223, 335; and ENG W234.

Cr. 3.

Hours

Class 2, Lab. 3,

MET 350 - Applied Fluid Mechanics

The fundamentals of fluid mechanics including properties of fluid, pressure, hydrostatic force on submerged areas; kinematics and dynamics of fluid flow; friction losses and sizing of pipe.

Preparation for Course

P: PHYS 218.

Cr. 3.

Hours

Class 3,

MET 360 - Heating, Ventilating, and Air Conditioning

A study of heat losses, heat-producing equipment, and cooling equipment in addition to the design of the direct systems. Includes controls and cost-estimating for commercial, industrial, and residential systems. Codes and standards are emphasized throughout the course.

Preparation for Course

P: 300.

Cr. 3.

Hours

Class 3,

MET 381 - Engineering Materials

Applications and characteristics of engineering materials used in industry with special emphasis on plastics and other nonferrous materials such as elastomers, composites, ceramics, and glass, including a survey of the processes involved. Also, metallurgy, failure analysis, corrosion resistance, and surface treatments of metallic and nonmetallic materials.

Preparation for Course

P: 180. C: CHM 111.

Cr. 3.

Hours

Class 3,

MET 487 - Instrumentation and Automatic Control

Instrumentation for pressure, temperature, velocity, rpm, strain, force, displacement, acceleration, counting, and sound will be studied. Automatic control will be studied covering topics of on-off and proportional control, programmable controllers, and computer control.

Preparation for Course

P: junior class standing, 216.

Cr. 3.

Hours

Class 2, Lab. 2,

MET 494 - Senior Design and Analysis

This course will focus on mechanical design, finite element analysis, environmental concerns, and/or ethical challenges. Technical reports will be written and one will involve an oral presentation.

Preparation for Course

P: senior class standing.

Cr. 3.

Hours

Class 3,

Additional Required Technical Courses

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECET 211 - Electrical Machines and Controls

Lecture, demonstration, and laboratory experiments are combined to acquaint the student with the elements of electrical power circuits and machines.

Preparation for Course

P: MA 154.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Notes

Course not open to EET students.

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Grade of C or better required

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

Computer Programming Elective Credits: 3

Additional Required Support Courses

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

Additional Core and Concentration Electives Credits: 6

- Any two courses from IET and MET, or a course approved by an MET advisor.

Total Credits Including 65 from A.S.: 132

Media and Public Communication (B.A.)

Program: B.A.

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

The student learning outcomes for the degree are as follows:

- Articulately explain current mass communication theory
- Identify and analyze the interrelation among media economics and relevant institutions and agencies
- Identify and analyze instances of the interdependent relations between media and society
- Critically analyze, both orally and in writing, media and public communication

The major in media and public communication offers theoretical, critical, and practical perspectives to help you navigate the changing communication environment of the 21st century. The courses in this major help you understand communication and media practices and adapt to new technologies. These courses provide concepts and skills that enable you to think and write critically about media and public communication in relation to society, culture, and everyday life. In addition, course areas are available that give you practical experience in message design, media production, and communication performance. Graduates of the program have careers in public information, media production, writing for media, management, sales, advertising, and public relations.

The Department of Communication offers a bachelor's degree in interpersonal and organizational communication and a minor in media production for those students who want more courses in practical skills. Two courses in a major offered in the Department of Communication can also be counted in the required minor. If the minor is selected from an Arts and Sciences department, the courses may be used to satisfy distribution requirements in the college.

To earn the B.A. with a major in media and public communication, you must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the Department of Communication as listed below. You also must earn a minor in an appropriate discipline.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits (not in COM) in Area III Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

Credits: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought (Not in COM) Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in COM) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in COM)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

COM 120 - Introduction to Communication Technology and Communication Fields

This is the first of a series of three, one credit courses that all Communication majors at IPFW entering Fall 06 and after are required to take. The applied portion of this course will introduce students to technology and software that is desirable for communication professionals. This course will also provide students with an overview of the general fields to which their degree will most likely lead them.

Cr. 1.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources, critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 308 - Applied Communication

This course explores the varied fields of communication. Students will be exposed to varied fields where they may utilize their degree. Students will also learn and practice job-seeking skills including job search, resume and cover letter preparation, and interviewing protocol and skill.

Preparation for Course

P: COM 120.

Cr. 1.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 330 - Theories of Mass Communication

An examination of mass communication theories and theorists. Readings and discussion of McLuhan, Lippman, LaFleur, Lazarsfeld, Schramm, Stephenson, and other significant contributors.

Cr. 3.

COM 480 - Senior Seminar in Communication

This course is designed as a capstone for the communication major. It will require students to demonstrate proficiency in oral, written, and mediated communication. Students will synthesize their knowledge of communication theory and content.

Preparation for Course

P: COM 120.

Cr. 1.

One of the following Credits: 3

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below.

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below.
or

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

Course taken to satisfy this requirement cannot also be counted in the 9 credit block below

Credits from among the following: Credits: 9

2.0 required in all courses in the major

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 312 - Rhetoric in the Western World

An explanation of major theoretical and philosophical concepts concerning rhetoric; the relationships between rhetoric and political, social, and personal decisions are explored. Ancient and modern authors are read.

Preparation for Course

P: 114.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

COM 314 - Advanced Presentational Speaking

Development of a marked degree of skill in the composition and delivery of various types of speeches including presentations in corporate board rooms, orientation meetings, banquet halls, public forums. Special emphasis on speeches related to the student's major vocational area.

Preparation for Course

P: 114.

Cr. 3.

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

COM 325 - Interviewing: Principles and Practice

Theory and practice of methods in selected interview settings: informal, employment, and persuasive. Emphasis on communication between two persons, questioning techniques, and the logical and psychological bases of interpersonal persuasion.

Preparation for Course

P: 114.

Cr. 3.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

COM 352 - Mass Communication Law

Study of Anglo-American traditions and trends, as well as current American conditions of the laws of libel, privacy, fair comment and criticism, privilege, property rights, and copyright as such factors affect the print journalist and the broadcaster. Emphasis is on existing state and federal regulations and precedents. Credit is not given for both COM 352 and JOUR J300.

Cr. 3.

COM 421 - Media Genres

Topic varies. Analysis of typical genres in film and television, such as horror, melodrama, westerns, science fiction, situation comedies, etc. Problems of general description or definition; themes and conventions; iconography peculiar to given genres. May be repeated with a different topic for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 251.

Cr. 3.

Variable Title

(V.T.)

COM 422 - Women, Men, and Media

An examination of the processes by which gender is constructed in the mass communication media. Students will be asked to consider how the technical, economic, and political constraints and capabilities of the media construct images of gender for audiences.

Preparation for Course

P: 250 or permission of instructor.

Cr. 3.

COM 471 - Communicating Peace

Examines the processes by which peace and/or violence are constructed at all communicative levels (intrapersonally, ideologically, and internationally) through face-to-face and mediated communication channels. Students gain an understanding of how we use and misuse communication processes to create peace and/or violence and learn skills for communicating peace.

Preparation for Course

P: 114.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.

Credits from among the following Credits: 3

COM 507 - Introduction to Semiotics

The study of languages, literatures, and other systems of human communication. Includes a wide range of phenomena that can be brought together by means of a general theory of signs. The course deals with three fundamental areas: 1) verbal communication, 2) nonverbal communication (iconic systems, gestures, body language, etc.), and 3) communication through art forms.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 515 - Persuasion in Social Movements

A study of the concept of persuasion in social movement theory and the role rhetoric has played historically in selected social movements such as suffrage, women's liberation, civil rights, evangelism, and trade unionism.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 516 - Analysis of Persuasive Messages

An examination of the ideational, structural, linguistic, and philosophical dimensions of persuasive messages. Emphasis on theoretical and practical components of contemporary persuasion.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 517 - Communication in Politics

Development and application of critical standards to the rhetoric employed by candidates for public office; study of the campaign strategies employed by parties and their candidates at various levels of government.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 518 - Theories of Persuasion

Review of contemporary theories, including analysis of concepts, models, and pertinent research across the broad spectrum of persuasive communication.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 521 - Theories of Rhetoric

A comprehensive survey of the principal figures, theories, and movements in rhetoric from the classical era to the present.

Preparation for Course

P: COM 318 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 522 - History and Criticism of Public Communication

A survey of speech-making and speech criticism as forces in shaping America from colonial times to World War II. The course examines great American speakers in shaping history through the use of rhetoric and oratory.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 527 - Introduction to Cultural Studies

An examination of selected cultural studies perspectives on mass communication. The course will cover cultural studies philosophies, theories, and/or approaches to the study of cultural artifacts and practices that may include some of the following: postmodernism, deconstruction, feminism, and postcolonialism, privileging context as a means of understanding culture.

Preparation for Course

P: COM 248 or 251 or consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 531 - Special Topics in Mass Communication

Critical analysis and evaluation of current and continuing problems in both commercial and public mass communication. May be repeated for credit.

Preparation for Course

P: COM 250 and consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 557 - Legal Dimensions of Communication

Analysis of contemporary issues in communication law. Research into selected problems concerning the law and its impact on face-to-face and mass communication.

Preparation for Course

P: COM 352.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

COM 563 - Public Policy in Telecommunication

An examination of the structure and operation of commercial, public, and international telecommunication. Regulatory agencies, both private and public, will be considered in terms of their effect on programming.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Minor and Elective Courses

- Credits in an approved minor (with grades of C or higher) Credits: 12–21
- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Music and an Outside Field (B.S.)

Program: B.S.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures

Aural Perception. Students will demonstrate the ability to:

- ability to relate the cognitive to aural perception and to aesthetic responsefakeFCKRemove
- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets

- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Students will develop expertise in music and a complementary field by combining the music core curriculum and performance studies with 26-30 hours of another discipline, demonstrated through the following:

- ability to articulate the relationship of music to the outside field or their personal rationale for combining the two areas
- expertise in the outside field through such capstone experiences as internships and senior projects for such skills-related outside field such as business or theatre
- expertise in the outside field by achieving a grade of C or higher in each course taken in the outside field

This degree combines a major in music with an opportunity to study in one of many available non-music areas, such as business, communication, electrical engineering technology, psychology, or the sciences. Some outside fields have specific course requirements. Students should consult with an advisor in the Department of Music for this information. Some outside fields require a 3-credit internship as a part of the outside field hours, and others offer the internship as an option. Consult with your advisor. Ensemble participation is not required during the semester of internship.

To earn the B.S. in Music and an Outside Field, one must satisfy the requirements of IPFW (see Part 8) and the music core, and complete the courses listed below. Credits required in the outside field must be approved in writing by an appropriate faculty member in the outside-field program of study. A record of this approval from the outside-field department will be kept as a part of your permanent file. A maximum of 6 credits in the outside field may be taken with the pass/not-pass option. An overall GPA of 2.50 or higher must be maintained in the outside field and is required for graduation. A course with a grade lower than C will not be counted toward outside-field course requirements.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z140 to fulfill Area V requirements

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sight-singing and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sight-singing and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-31

Applied Primary (includes recital) Credits: 14-16

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7-8 semesters)

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X301 - Recital: Concentration Level

Concurrent enrollment in 300-level applied study on an instrument of concentration. Public performance of 25-50 minutes of assigned literature, with a minimum of 25 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296 and minimum of two completed semesters of post-Upper Division study; B.S.M.T. majors are required a minimum of one completed semester of post-Upper Division study.

Cr. 0.

Applied Secondary Credits: 4-7

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise,

facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 7-8

Outside Field Credits: 26-30

Some outside fields include in this credit range a 3-credit internship. These outside fields require only seven semesters of ensemble participation; consult your advisor.

Other Requirements

- Free electives Credits: 4-9

Total Credits: 130

Music Education (B.Mus.Ed)

Program: B.Mus.Ed.

Department of Music

College Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.

- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi

Music Competencies.

Students in all teaching concentrations will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for P-12 general music
- competency sufficient to compose, arrange, and adapt music from a variety of sources to meet the needs and abilities of school performance groups and classes
- functional performance ability in keyboard and voice
- competency in transposing and improvising piano accompaniments for classroom music activities
- competency in applying analytical and historical knowledge to curriculum development, lesson planning, and classroom and performance activities

Vocal/general concentration. Students will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for vocal music
- skill in singing and playing parts from a choral score as required in a choral rehearsal
- vocal skill and technique sufficient to teach effective use of the voice

Instrumental/general concentration. Students will demonstrate:

- knowledge of content, methodologies, philosophies, materials, technologies, repertoire and curriculum development for instrumental music
- knowledge of and performance ability on wind, string and percussion instruments sufficient to teach beginning students
- skill in transposing instrumental music

Teaching competencies. Students in all teaching concentrations will demonstrate:

- understanding of the philosophical, historical, social and psychological foundations of music education

- understanding of child growth and development and the principles of learning as they relate to music education
- ability to teach music to a variety of age groups in a variety of classroom and ensemble settings, including skill in effective management of classes and rehearsals
- ability to assess the aptitudes and experiences of individuals and groups of students, and to plan learning to meet the assessed needs.
- ability to apply appropriate rehearsal techniques and procedures to the planning, organization, and implementing of effective rehearsals
- understanding of evaluative techniques and the ability to apply appropriate measures in assessing the musical progress of students and in evaluating materials, objectives and procedures of the curriculum
- ability to work productively in the educational system, maintaining positive relationships and empathizing with students and colleagues of different backgrounds
- ability to articulate a rationale for music as a core component in a well-rounded education, and to effectively advocate for a music program to parents, professional colleagues and administrators

The music-education program provides preparation for teaching music in grades K–12. One may choose to concentrate in choral/general music education, or instrumental/general music education. Upon satisfactory completion of this program, one is eligible to apply for an Indiana teaching license in the appropriate concentration.

To earn the B.Mus.Ed., one must satisfy the requirements of IPFW (see Part 8), the music core, and the School of Education (see Part 4) and satisfactorily complete all music and professional education courses with a grade of C or better.

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z140 to fulfill Area V requirements

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-28

Applied Primary (includes recital) Credits: 14

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

Applied Secondary Credits: 4-7

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X301 - Recital: Concentration Level

Concurrent enrollment in 300-level applied study on an instrument of concentration. Public performance of 25-50 minutes of assigned literature, with a minimum of 25 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296 and minimum of two completed semesters of post-Upper Division study; B.S.M.T. majors are required a minimum of one completed semester of post-Upper Division study.

Cr. 0.

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensemble Credits: 7

Professional Music Courses Credits: 13

MUS K312 - Arranging for Instrumental and Vocal Groups

Fundamentals of orchestrations, arranging and scoring for orchestra, band, and chorus.

Preparation for Course

P: T214, T216, U109.

Cr. 2.

MUS M216 - Music Education Lab/Field Experience

Taken concurrently with M236. Field experiences and observations in vocal and instrumental music program K-12.

Cr. 0.

MUS M236 - Introduction to Music Education

An overview of the music education profession, including the study of philosophical and historical foundations of music teaching and learning. Includes examination of curriculum and current issues in music education.

Cr. 2.

MUS M319 - Music Education Lab/Field Experience

Taken concurrently with M339. Field experiences and observations in elementary general music.

Cr. 0.

MUS M339 - General Music Methods K-8

Must be taken concurrently with M319. The study of curriculum, methods, and materials for the elementary general music program. Includes sequential planning of lessons, introduction to important methodologies, and directing the elementary-age choir.

Preparation for Course

P: T214, T216, V201(if applicable), X296, X297, X299.

Cr. 2.

MUS U357 - Music in Special Education

Introduction to teaching music to special needs students including those with cognitive, physical, behavioral, and emotional disabilities. Development of skills in planning and structuring experiences to facilitate appropriate participation of students in the K-12 classroom. Overview of various disabilities and historical, cultural, and ethical issues. Participation in experiential music lessons and simulations; field observations of special needs students in music education.

Preparation for Course

P: X297.

Cr. 3.

MUS X297 - Music Education Upper Divisional Skills Examination

An oral examination of knowledge and professional development for the purpose of evaluating progress toward the Bachelor of Music Education.

Preparation for Course

P: T214, T216, X296, M236, W200, W313, and math requirement.

Cr. 0.

Professional Music Concentration Courses Credits: 11-12

Choral and General Music

MUS E494 - Voice Pedagogy

Survey and analysis of various aspects of vocal pedagogy, including the physiology of the vocal mechanism, vocal terminology, teaching methods, vocal health, and the relationship of the singing process to vocal artistry. Class will include student presentations, teaching demonstrations, and lab experience.

Preparation for Course

P: consent of instructor.

Cr. 3.

MUS G371 - Choral Conducting I

Further development of basic conducting technique with a concentration on choral concepts. Emphasis on period style elements, analytical listening, aspects of choral tone, text analysis, score preparation, rehearsal planning, vocal techniques, and other advanced problems in choral conducting. Conduct representative works from varying style periods.

Preparation for Course

P: G370.

Cr. 2.

MUS M318 - Music Education Lab/Field Experience

Taken concurrently with M338. Field experiences and observations in choral music education.

Cr. 0.

MUS M338 - Methods and Materials for Teaching Choral Music

Development and organization of administration of choral music programs in the middle and secondary school. Emphasis on auditioning and placement, vocal production, rehearsal techniques, and appropriate choral literature.

Preparation for Course

P: T214, T216, V201 (if applicable), X296, X297, X299. Must be taken concurrently with M318.

Cr. 2.

MUS U233 - Applied French Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U243 - Applied German Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U253 - Applied Italian Diction for Singers

Drill on phonetics and application to song and opera.

Cr. 1.

MUS U361 - English Diction for Singers

Drill on phonetics with application to song and opera.

Cr. 1.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

(nonvocal concentrates only)

Music Education Electives: 2

Instrumental and General Music

MUS G373 - Instrumental Conducting

Further development of score reading and conducting techniques. Emphasis on experience conducting live instrumental ensembles.

Preparation for Course

P: G370.

Cr. 2.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

MUS M317 - Music Education Lab/Field Experience

Taken concurrently with M337. Field experiences and observations in instrumental music education.

Cr. 0.

MUS M337 - Methods and Materials for Teaching Instrumental Music

Must be taken concurrently with M317. Development and organization of instrumental music programs, including methods and materials, rehearsal techniques, and a survey of band and orchestra literature.

Preparation for Course

P: T214, T216, X296, X297, x299; three of the following: G261, G272, G281, G337, G338.

Cr. 2.

Four of the following (excluding primary instrument) Credits: 4

MUS G261 - String Techniques

Class instruction and teaching methods for developing proficiency on violin, viola, violoncello, and double bass.

Cr. 1-2.

MUS G272 - Clarinet and Saxophone Techniques

Class instruction for developing proficiency on clarinet and saxophone. Study of methods and materials for teaching these two instruments in class or private lessons.

Cr. 1-2.

MUS G281 - Brass Instrument Techniques

Class instruction for developing proficiency on trumpet, French horn, trombone, euphonium, and tuba. Study of methods and materials for teaching brass instruments in class or private lessons.

Cr. 1-2.

MUS G337 - Woodwind Techniques

Class instruction and teaching methods for flute, oboe, and bassoon.

Cr. 1-2.

MUS G338 - Percussion Techniques

Class instruction to learn the rudiments of snare drum, tympani, and mallet instruments. Study of methods and materials for teaching percussion instruments in class or private lessons.

Cr. 1-2.

Music Education Electives: 5

Professional Education Courses Credits: 22

A GPA of 2.5 is required.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M482 - Student Teaching: All Grades

Full-time supervised student teaching in music at the elementary, junior high/middle school, and/or high school level in an accredited school within Indiana.

Cr. 1-16.

Notes

Additional fee.

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Portfolio Cr. 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation

required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC P254 - Educational Psychology for Teachers of All Grades

The application of psychological concepts to school learning and teaching in the perspective of development from childhood through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Total Credits: 137–141

Music Performance (B.Mus.)

Program: B.Mus.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences

- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Performance majors will demonstrate:

- the ability to work independently to prepare performances at a high level of quality
- knowledge of applicable solo and ensemble literature
- orientation to and experience with the fundamentals of pedagogy

Piano performance majors will demonstrate:

- ability to perform as a soloist, an accompanist and/or chamber musician
- ability to function as an accompanist
- ability to play in chamber ensembles

Vocal performance majors will demonstrate:

- ability to perform as a soloist
- ability to perform operatic roles
- ability to perform in choral ensembles

Instrumental performance majors will demonstrate:

- ability to perform as a soloist
- ability to perform in chamber ensembles
- ability to perform in large ensembles

The Bachelor of Music program provides an opportunity to earn a performance degree in voice, winds, strings, piano, or percussion.

To earn the Bachelor of Music, one must satisfy the requirements of IPFW (see Part 8) and the music core, and satisfactorily complete the following courses, and earn a grade of C or better in each music course.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- Music majors may not use MUS Z140 to fulfill Area V requirements
- Vocal Performance Majors must take THTR 134

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 32

Applied Primary (includes recital) Credits: 16

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

Applied Secondary Credits: 4-7

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(8 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

MUS X401 - Junior Recital: Performance Major

Public performance of 30-50 minutes of assigned literature, with a minimum of 20 minutes being post-Upper Division. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X296. Concurrent enrollment in 400-level study on major instrument.

Cr. 0.

MUS X402 - Senior Recital: Performance Major

Concurrent enrollment in 400-level applied study on major instrument. Public performance of 40-60 minutes of assigned literature prepared after junior recital. Recital requires approval of faculty committee at least 14 days prior to scheduled recital date. For complete guidelines refer to department handbook.

Preparation for Course

P: X401 and one completed semester of applied study after X401.

Cr. 0.

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 8

Piano Performance majors take major ensembles for 6 semesters and

MUS X002 - Piano Accompanying

Study of the art and practice of accompanying singers and instrumentalists. Areas covered include sight-reading, ensemble playing, coaching techniques, style and interpretation, transposition, and score reading.

Preparation for Course

P: Consent of instructor.

Cr. 1-2.

for 2 semesters

Professional Music Courses and Free Electives Credits: 26

Piano Majors (26 credits)

- Piano ensemble/piano chamber ensemble Credits: 2
- Keyboard literature Credits: 6

- Piano pedagogy Credits: 3
- Electives in music Credits: 6
- Free electives Credits: 9
- *Voice Majors (26 credits)*
- Song literature Credits: 3
- Foreign language Credits: 8
- Diction Credits: 4
- Vocal pedagogy Credits: 3
- Opera Ensemble Credits: 2
- Elective credits in music Credits: 3
- Free electives Credits: 3

Instrumental Majors (26 credits)

- Instrumental literature Credits: 3
- Instrumental pedagogy Credits: 2
- Additional ensembles Credits: 6
Refer to *Department of Music Handbook*
- Elective credits in music Credits: 6
- Free electives Credits: 9

Total Credits: 120-123

Music Therapy (B.S.M.T.)

Program: B.S.M.T.

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

Performance. Music majors will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.

Music Theory. Students will demonstrate:

- knowledge of musical form, structures, concepts, and terms
- skill and fluency in application through analysis
- ability to compose within basic musical structures
- perspective regarding historical styles and structures
- ability to relate the cognitive to aural perception and to aesthetic response

Aural Perception. Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions

Music History and Literature. Students will demonstrate knowledge of:

- the principal composers, genres, styles, and performance practices of Western art music
- representative compositions of western art music, recognized aurally and from score
- non-western music and its cultural contexts and influences
- social, political and aesthetic influences and impact on music
- the influence of music on its social, political and aesthetic contexts.

Keyboard. All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:

- perform appropriate technical skills such as scales, arpeggios, etc.
- play chord progression from Roman numerals
- improvise
- play "by ear" and from lead sheets
- harmonize melodic lines
- perform repertoire at the intermediate level
- transpose simple pieces and lead sheets
- sight read at the late elementary level
- play from 4-part open score

Technology. Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:

- knowledge of computer hardware
- ability to use notational software
- ability to use the Internet as a resource for research

Conducting. Students will demonstrate conducting knowledge and skills sufficient to run an effective rehearsal and performance, including the following:

- standard beat patterns and meters
- common articulations
- cues and cutoffs
- varying dynamics
- setting, maintaining, and altering tempi
- score preparation

Music Foundations. Students will demonstrate general musicianship, as well as specific music knowledge and skills, sufficient to appropriately and effectively apply a wide variety of music interventions within the clinical setting including the following:

- recognition of standard works from various periods and cultures, and identification of their elemental, structural and stylistic characteristics
- sight-singing transposing and aural dictation of melodies, rhythms and chord progressions

- composing songs and simple instrumental pieces in a variety of styles with simple accompaniments
- adapting, arranging, transposing, and simplifying compositions for vocal and non-symphonic instrumental ensembles
- performing appropriate undergraduate repertoire, and demonstrating musicianship, technical proficiency, and interpretive understanding on a principle instrument/voice
- functional keyboard skills including accompanying, sight-reading and transposition skills for a basic repertoire of traditional, folk and popular songs and musical styles
- functional guitar skills including accompanying, sight-reading and transpositions skills for a basic repertoire of traditional, folk, and popular songs and musical styles
- functional vocal skills for singing a basic repertoire of traditional, folk and popular songs and musical styles and for vocally leading group singing
- utilizing a variety of non-symphonic and ethnic instruments and percussion for accompanying and leading group singing and playing
- improvise on non-symphonic and ethnic instruments and percussion in a wide variety of styles and moods for accompaniment and group playing
- conducting small and large vocal and instrumental ensembles

Clinical Foundations. Students will demonstrate an understanding of and ability to integrate philosophies, orientations, theories and techniques of traditional therapies into clinical music therapy practice, including the following:

- understanding of the general populations and specific disability and diagnostic groups to which music therapy clients typically belong, including:
 - causes and symptoms of major exceptionalities
 - basic terminology and diagnostic classifications
 - potentials, limitations and problems of exceptional individuals
- understanding of human development throughout the life span, including major theories of development
- basic knowledge of the major schools of thought and their accepted methods of therapeutic interventions
- demonstrate an understanding of basic group process within therapeutic environments
- utilize the dynamics of group process to address therapeutic goals
- develop a depth of self-awareness that allows for the establishment of ethically appropriate and effective therapeutic relationships

Music Therapy. Students will demonstrate an understanding of, and ability to integrate and practice music therapy-specific concepts and skills in preparation for effective provision of clinical music therapy services to clients in a manner which adheres to professional standards of clinical practice and to ethical code, including the following:

- basic knowledge of music therapy methods, techniques, materials and equipment and their appropriate applications, as appropriate to a variety of client populations and settings
- application of the philosophical, psychological, physiological and sociological bases for the use of music as therapy
- application of the principles and methods for evaluating the effectiveness of music therapy
- communication of a basic understanding of the concepts, processes, methods and techniques, cultural implications, and analyses and interpretations of music therapy assessment
- a basic understanding of the process of formulating and focusing music therapy treatment plans in response to the strengths, weakness, needs, and socio-cultural contexts of individuals and groups
- ability to apply music therapy treatment in response to the strengths, weakness, needs, and socio-cultural contexts of individuals and groups
- ability to creatively utilize a wide variety of musical intervention, including use of voice, solo, and accompaniment instruments, pitched and non-pitched percussive instruments, pre-composed music, and recorded music, in order to effectively address clients' treatment objectives
- creativity and flexibility in responding to client needs as they are presented within the music therapy session

- effective use of therapeutic self within the music therapy session in order to shape client behavior and increase client communication
- effectively communicate, verbally and in writing, all aspects of the clinical process, including, assessment, planning, implementation, outcomes, and evaluation
- attitudes and behaviors that reflect the standards and ethical codes required of the music therapy professional basic knowledge of quantitative, qualitative and historical research in music therapy, and its implications for and applications to music therapy clinical practice.

Music therapists use music and music activities to promote health and rehabilitation for individuals of all ages with disabilities in a variety of agencies such as hospitals, schools, rehabilitation centers, and private practice settings. Students must satisfactorily complete a six-month internship at the conclusion of the required course work. Graduates of the B.S.M.T. program are eligible to sit for the national certification exam sponsored by the Certification Board for Music Therapists. Music therapy majors must work closely with an advisor to select general education courses that meet national certification requirements. Bachelor of Science in Music Therapy (B.S.M.T.) candidates have some specific general education courses in some categories.

Gerontology

For information about earning an undergraduate certificate in gerontology concurrently with the B.S.M.T., consult the gerontology program entry in this section of this Bulletin. Additional information is published in the *Department of Music Student Handbook*.

IPFW General Education Requirements (33 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

Reading/Writing Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Quantitative Reasoning Credits: 3

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Area III—The Individual, Culture, and Society Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Music majors may not use MUS Z101 to fulfill Area IV requirements

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

Area V—Creative and Artistic Expression Credits: 3

Music majors may not use MUS Z140 to fulfill Area V requirements

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Music Core Credits: 33

MUS G370 - Techniques for Conducting

Introduction to philosophy and fundamentals of conducting. Score preparation, baton, and hand gestures for the right hand and use of left hand; all standard meters and time patterns: varying dynamics, accents, musical characteristics, and styles.

Preparation for Course

P: T214, T216 and X296.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS M403 - History of Music I

Study of music from the beginnings of Western civilization to 1700. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: X296, M201, M202 (or equivalent), T214, and ENG W131.

Cr. 3.

MUS M404 - History of Music II

Study of music from 1700 to the present. Analysis of representative compositions; relationship of music to the socio-cultural background of each epoch.

Preparation for Course

P: M403.

Cr. 3.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS T213 - Music Theory III

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Medieval through classical sonatas, including the entire harmonic vocabulary of the Common Practice Era.

Preparation for Course

P: T114.

Cr. 3.

MUS T214 - Music Theory IV

Required of all music majors. Historical survey of the elements, forms, and aesthetics of musical styles through written analysis, listening examples, and structured composition activities. Classical through 20th century.

Preparation for Course

P: T213.

Cr. 3.

MUS T215 - Sightsinging and Aural Perception III

Must be taken concurrently with T213. Required of all music majors. Music dictation and sight-singing of chromatic melodic and harmonic materials and modulation.

Preparation for Course

P: T114, T116.

Cr. 1.

MUS T216 - Sightsinging and Aural Perception IV

Must be taken concurrently with T214. Required of all music majors. Music dictation and sight-singing of extended examples as well as 20th century melodic and harmonic elements.

Preparation for Course

P: T213, T215.

Cr. 1.

MUS T315 - Analysis of Musical Form

Analysis of formal and harmonic structure of representative Baroque, Classical, and early Romantic compositions.

Preparation for Course

P: T214, T216, M202, X296.

Cr. 3.

MUS U109 - Computer Skills for Musicians

Computer music notation systems and the use of word processing, graphics, database, and other computer programs in music research and teaching.

Cr. 2.

Variable Title

(V.T.)

Performance Studies Credits: 25-28

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(7 semesters)

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without cords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

Applied Primary (includes recital) Credits: 14

- MUS X269 - Upper Divisional Exam Credits: 0

Applied Secondary Credits: 4-7

Non-keyboard Concentrations take:

MUS P111 - Class Piano I

Preparation of non-keyboard concentrations/majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

C: T113; music majors only.

Cr. 1-2.

MUS P121 - Class Piano II

Preparation of non-keyboard concentrations/ majors for the keyboard proficiency examination (X299). Six sequential components provide sequential presentation of fundamental skills. Three performance examinations evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: T111, T113; music majors only.

Cr. 1-2.

MUS P131 - Class Piano III

Continuation of preparation of keyboard proficiency with pass-off of individual components of the examination during the semester. Three performance examinations during the semester evaluate poise, facility, and general musicianship at the keyboard.

Preparation for Course

P: P121 and T114, or departmental placement.

Cr. 1-2.

MUS P141 - Class Piano IV

Directed study of remaining components of keyboard proficiency examination.

Preparation for Course

P: P131 or departmental placement; five passed components of keyboard proficiency. C: X299.

Cr. 1-2.

Keyboard Concentrations take:

MUS P211 - Keyboard Techniques

Preparation of the functional skills necessary for the completion of the keyboard proficiency exam. Keyboard concentrations and majors only.

Preparation for Course

P: T114. C: X299, permission of instructor.

Cr. 1-2.

and 200-level applied study (6 credits)

Ensembles Credits: 7

Professional Music Therapy Courses Credits: 28

MUS E253 - Functional Music Skills

Overview of musical skills based on AMTA professional competencies. Areas addressed will include simple composition and arranging skills, keyboard skills, guitar skills, voice skills, non-symphonic instrumental skills, and improvisation. Involves application of functional music skills through role-playing and implementation of instruments in practicum sessions.

Preparation for Course

P: permission of instructor.

Cr. 2.

Session Indicators

(spring)

MUS L253 - Music Therapy Observation Practicum

Observation of professional music therapy sessions in a variety of settings with client populations of varying needs.

Preparation for Course

P: L153.

Cr. 1.

Session Indicators

(fall)

MUS L254 - Music Therapy Practicum I

Students provide services to music therapy clients at the campus clinic with focus on the assessment process. Involves clinical hours and attendance at weekly seminar. May be repeated. Liability insurance required.

Preparation for Course

P: L253, U355, concurrent enrollment in L420.

Cr. 1.

Session Indicators

(spring)

MUS L340 - Music Therapy in Healthcare Settings

Study of music therapy methods and materials commonly used in assessment and treatment of children, adults, and the elderly in healthcare settings, with emphasis on stress management, relaxation, rehabilitation, and pain management.

Preparation for Course

P: X296, X298, or permission of director of Gerontology Program or director of Music Therapy Program.

Cr. 3.

Session Indicators

(spring, even years)

MUS L353 - Music Therapy Practicum II

Students provide services to elderly/geriatric individuals or groups focusing on the development of treatment interventions and plans. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L254, X296, C298.

Cr. 1.

Session Indicators

(fall)

MUS L354 - Music Therapy Practicum III

Students provide music therapy services to physically/mentally disabled clients with emphasis on the process of assessment, treatment, and evaluation. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L353.

Cr. 1.

Session Indicators

(spring)

MUS L410 - Administrative and Professional Issues in Music Therapy

Study of government and professional guidelines that influence music therapy services and documentation practice. Includes development of administrative skills such as proposal writing, public relations, budgeting, staff relationships, interviewing, program development, and professional standards and ethics.

Preparation for Course

P: X296, X298, L421.

Cr. 3.

Session Indicators

(spring)

MUS L418 - Psychology of Music

Introduction to the physical, psychological, and physiological aspects of sound and music. Survey of the theories related to sound production, acoustics, music perception and learning, and the effects of sound and music on the behavior of humans. Overview of music psychology research, and the scientific method and research techniques.

Preparation for Course

P: junior standing or permission of instructor.

Cr. 3.

Session Indicators

(spring, even years)

MUS L419 - Introduction to Music Therapy Research Methods

Survey of current music therapy research including quantitative, qualitative, and historical literature with focus on underlying philosophies of research, research design, validity and reliability, and research ethics. Development of skills in defining research questions, reviewing literature, basic analysis and interpretation of data, and application of research to clinical practice.

Preparation for Course

P: X296, X298 or permission of instructor.

Cr. 3.

Session Indicators

(fall, odd years)

MUS L420 - Clinical Processes in Music Therapy

Introduction to processes, principles, and concepts required to conduct music therapy with clients according to AMTA Standards of Clinical Practice. Includes the influence of music on behavior and applied behavioral analysis. Emphasis on assessment, documentation, outcomes measurement, treatment planning, and evaluation.

Preparation for Course

P: L153, U355; concurrent enrollment in MUS L254.

Cr. 3.

Session Indicators

(spring)

MUS L421 - Music Therapy Practicum IV

Students provide music therapy services to psychiatric/mentally ill clients or groups focusing on the process of assessment, treatment, and evaluation. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: MUS L354.

Cr. 1.

MUS L422 - Music Therapy Theories and Techniques

Study of philosophies, theories, and techniques of various music therapy, music education, and counseling models including Analytic, Creative, and Orff music therapy. Emphasis on the integration of models to develop personal philosophies and theories of music therapy practice.

Preparation for Course

P: X296, X298.

Cr. 3.

Session Indicators

(fall, even years)

MUS L424 - Music Therapy Internship

Acceptance to internship program required prior to registration. A six-month internship completed under the supervision of a professional and credentialed music therapist at an AMTA approved clinical site. Course must be completed within two years of the completion of all course work. Internship must be completed before conferring of the degree. Liability insurance required.

Preparation for Course

P: All degree-required course work must be successfully completed prior to registration.

Cr. 1-2.

Session Indicators

(fall, spring, summer)

MUS U355 - Music and Exceptionality

Basic accompaniment skills on the autoharp, guitar, or piano are desirable prerequisites. Focus on designing, planning, and implementing music-based interventions for individuals with diverse abilities with an emphasis on music leadership, instructional and facilitation skills. Incorporates a wide variety of music therapy applications for children and adolescents, and covers the role of music in special education including historical and legal precedents, learning styles, and the IEP process.

Preparation for Course

P: E153 or the equivalent experience; sophomore standing or permission of the instructor.

Cr. 4.

Session Indicators

(fall)

MUS X298 - Music Therapy Upper Divisional Skills Examination

To be taken concurrently with or after successful completion of X296. A written application and oral examination of observation techniques, clinical music therapy skills, and functional music and accompaniment skills. This test is an evaluation of progress toward the Bachelor of Science in Music Therapy. Required of all music therapy majors and equivalency students.

Preparation for Course

P: L153, L420, U355, application to the IPFW Music Therapy Practicum Program, permission of instructor.

Cr. 0.

Additional Requirements Credits: 7

MUS K312 - Arranging for Instrumental and Vocal Groups

Fundamentals of orchestrations, arranging and scoring for orchestra, band, and chorus.

Preparation for Course

P: T214, T216, U109.

Cr. 2.

MUS L100 - Guitar

Cr. 1.

MUS V201 - Voice Class

Class instruction on vocal production and vocal hygiene. A repertoire of patriotic, religious, folk, musical theatre, and art songs will be developed.

Cr. 1.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

General Electives Credits: 6

The following courses are recommended as general electives:

- HSRV 210 or HSRV 211

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

or

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

MUS E353 - Orff and Percussion Techniques for Music Therapy

Techniques of using music, movement, dance, improvisation in music therapy situations. Emphasis on adaptation of Orff music education and percussion techniques for use with special populations and inclusive classrooms. Includes integration of Orff skills with other music therapy techniques.

Preparation for Course

P: X298, E 253.

Cr. 1-6.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

or

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

or

SOC S331 - Sociology of Aging

Social aspects of aging and older adulthood. Topics include myths about aging; the process of aging, sexual behavior, social relationships, family relationship, religious activities, and leisure of the elderly.

Preparation for Course

P: SOC S161; either ENG W233 or SOC 260 (or equivalent); or consent of instructor.

Cr. 3.

Total Credits: 132–135

Note

Music therapy majors must have at least seven courses in the behavioral/health/natural sciences. General electives may include courses required for the gerontology certificate program, a minor in psychology, or other program minor. See *Department of Music Handbook* for more options and further information.

Nursing (B.S.)

Program: B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy. student learning outcome
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills.
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

Career Steps

As a graduate of an IPFW pre-licensure nursing program, students will have attained the knowledge and skills needed to provide quality healthcare and the academic credentials required to take the National Council Licensure Examination (NCLEX-RN). Upon successful completion of this examination, the student will be eligible to practice as a registered nurse. The baccalaureate degree (B.S.) graduate is prepared at the professional level to function in a leadership role with other team members in varied and complex healthcare settings.

IPFW General Education Requirements

Area I-Linguistic and Numerical Foundations

- Statistic - *See Part 2 General Education Requirements for approved courses*

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II-Natural and Physical Sciences

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Area III-The Individual, Culture, and Society (Credits: 6)

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

or

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV-Humanistic Thought (Credits: 6)

See Part 2 General Education Requirements for approved courses

Area V-Creative and Artistic Expression (Credits: 3)

See Part 2 General Education Requirements for approved courses

Area VI-Inquiry and Analysis (Credits: 3)

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

Program Requirements

B.S. Core Credits: 73

- NUR (elective) Credits: 3

NUR 103 - Professional Seminar I: Communications, Ethics and Diversity

Introduction to the role of the registered nurse involving history of nursing, professionalism, code of ethics, cultural sensitivity, and therapeutic communication. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are initiated.

Preparation for Course

P: ENG W131

Cr. 2.

NUR 115 - Nursing I: Introduction to Nursing

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Explores the concepts of health, illness, individuals' pursuit of wholeness, and nursing intervention through the use of the nursing process. Basic human needs, interpersonal relationships, and dynamics of behavior as they apply to the Neuman Systems Model are studied. Laboratory experience is provided in the clinical setting.

Preparation for Course

P or C: CHM 112 or CHM 104, BIOL 204, NUR 103, PCTX 201; C: NUR 130.

Cr. 5.

Hours

Class 4, Lab. 6,

NUR 130 - Essential Clinical Skills

Introduction to clinical skills and procedures required for safe nursing practice through the use of demonstration, return demonstration, "hands-on" practice, and critical thinking exercises. Independent practice time is required.

Preparation for Course

P: or C: NUR 103, BIOL 204, PCTX 201; C: NUR 115.

Cr. 2.

NUR 202 - Nursing II: Medical-Surgical Nursing of Adults

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Applies the nursing process to the care of adults who experience problems related to selected basic human needs. Surgical intervention as a stress situation is studied. Laboratory experiences are provided in hospitals and other community agencies.

Preparation for Course

P: BIOL 204, NUR 115, PCTX 201; C: BIOL 220.

Cr. 6.

Hours

Class 4, Lab. 6.

NUR 241 - Psychiatric Mental Health Nursing B

This didactic and clinical nursing course introduces concepts specific to the care of patients/clients experiencing alterations with mental health. The study of personality development, psychology, and sociologic concepts from previous social science and nursing courses are integrated throughout the course. The assessment, application of the nursing process, critical thinking, communication skills, and therapeutic use of self are emphasized specific to the related psychopathology. Clinical experiences are provided in hospitals and other community mental health agencies.

Preparation for Course

P: NUR 115 or P: or C: NUR 117.

Cr. 4.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 336 - Nursing IIIB: Medical-Surgical Nursing of Adults

This course utilizes the nursing process in caring for clients who experience complex problems related to selected basic human needs. Laboratory experiences are provided in hospitals and other community-related agencies.

Preparation for Course

P: NUR 202; P: or C: NUR 117, 334, 346, FNN 303.

Cr. 7.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice.

(General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters of normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 368 - Maternity Nursing B

Applies the nursing process and an eclectic nursing theory model in caring for the emerging family group throughout the maternal cycle. Laboratory experiences are provided in hospitals. The student will be involved with community agencies offering care to the pregnant family.

Preparation for Course

P: NUR 202 or C: 117.

Cr. 3.

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application

of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 379 - Caring for Children and Families B

Emphasizes the role of the nurse in assisting children and families of all cultural backgrounds in health promotion, maintenance, and restoration. Utilizes critical thinking, culturally sensitive age-appropriate communication, technical skills, leadership/management skills, growth and development concepts, and the nursing process to care for children with diseases unique to childhood. Laboratory experiences focus on pediatric healthcare in the community, as well as the acute care setting.

Preparation for Course

P: NUR 336; C: FNN 303.

Cr. 3.

Hours

Class 2, Lab. 3,

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C: NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 433 - Advanced Concepts in Critical Thinking

This course will help students apply advanced concepts in critical thinking. Teaching strategies challenging the learner to apply critical thinking include the use of scenarios, integrations of computer-assisted learning, and exploration of effective healthcare delivery. Computerized testing is utilized to prepare students for NCLEX-RN examination. This course must be taken the last semester of the baccalaureate degree program.

Preparation for Course

P: NUR 418, 442; C: NUR 419.

Cr. 1.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 pr 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

Supporting Course Credits: 49

- Credits in communication at the 300-400 level Credits: 3
- Credits in humanities (General Education IV) Credits: 6

- Credits in elective (General Education V) Credits: 3

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PCTX 201 - Introductory Pharmacology

An introduction to the pharmacological basis of therapeutics. This course involves an integration of knowledge of anatomy, physiology, microbiology, and chemistry with the biological and selected chemical and physical actions and reactions of drugs. Primarily for students in nursing and other paramedical programs.

Preparation for Course

P: BIOL 203 or equivalent, CHM 104 or equivalent; C: BIOL 204 or equivalent.

Cr. 3-4.

Session Indicators

(fall, spring, summer)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose from the following Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

Total Credits: 122

Nursing (LPN - B.S.)

Program: LPN - B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy.
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

LPN Mobility

Criteria for LPN Applicants

LPN to RN Mobility Track Seminar will be offered spring semester only. LPN applicants must meet the following requirements:

- Hold a current LPN license prior to beginning NUR 336 Nursing IIIB: Med-Surg Nursing of Adults.
- Be admitted to IPFW as a degree seeking student.
- Be a graduate of an NLNAC or equivalent accredited practical nursing program.
- Have a minimum GPA of 3.0 or higher upon graduation from the LPN program.
- A minimum GPA does not guarantee admission. The actual GPA necessary for admission varies with the GPA distribution of the applicant pool and the number of available slots for admission.
- Have completed at least 8 credit hours of anatomy and physiology within five years of application.
- Have completed CHM 104 or equivalent chemistry within 10 years of application.
- Have completed BIOL 220 or equivalent biology within 5 years of application.
- Have credit or accepted transfer credit in the 24 credit hours of identified pre-nursing curriculum with a grade of C or better in each course. Courses may be repeated only one time. Pre-nursing curriculum:
 - PSY 120
 - BIOL 220
 - ENG W131
 - CHM 104 (equivalent CHM 111 and 112)
 - BIOL 203 and BIOL 204
 - COM 114
- Applicants are required to take an Pre-Admission Examination. The examination is administered on specific dates and at specific times. Applicants pay a testing fee.
- Students who earn a grade of "C" or better in NUR 117 and NUR 336 will be awarded an additional 13 credit hours for the first year nursing courses. Student may take NUR 241 prior to NUR 336, but the awarding of the 13 credit hours does not occur until successful completion of NUR 117 and NUR 336.

- Students not successful in NUR 117 and NUR 336, will not be granted the 13 credit hours for the first year nursing courses and will need to successfully complete NUR 202 to continue in the nursing program.

Criteria for Dismissal from Pre-Nursing / Ineligibility for Admission to Nursing

- A student who earns two grades below C in the same or any combination of 2 courses required in the pre-nursing curriculum will be ineligible for program admission for a period of five years after earning the last grade below C.

NOTE: Students who have previously been dismissed from the IPFW Nursing program, or any nursing degree program, and return under the above LPN admission will be dismissed from the program with a failure of any course required in the nursing curriculum.

LPN - B.S. Credit Awarded

A student who earns a grade of C or better in NUR 117 and NUR 336 will be awarded an additional 13 credit hours for the following first-year nursing courses:

NUR 115 - Nursing I: Introduction to Nursing

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Explores the concepts of health, illness, individuals' pursuit of wholeness, and nursing intervention through the use of the nursing process. Basic human needs, interpersonal relationships, and dynamics of behavior as they apply to the Neuman Systems Model are studied. Laboratory experience is provided in the clinical setting.

Preparation for Course

P or C: CHM 112 or CHM 104, BIOL 204, NUR 103, PCTX 201; C: NUR 130.

Cr. 5.

Hours

Class 4, Lab. 6,

NUR 130 - Essential Clinical Skills

Introduction to clinical skills and procedures required for safe nursing practice through the use of demonstration, return demonstration, "hands-on" practice, and critical thinking exercises. Independent practice time is required.

Preparation for Course

P: or C: NUR 103, BIOL 204, PCTX 201; C: NUR 115.

Cr. 2.

NUR 202 - Nursing II: Medical-Surgical Nursing of Adults

Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and corequisites. Applies the nursing process to the care of adults who experience problems related to selected basic human needs. Surgical intervention as a stress situation is studied. Laboratory experiences are provided in hospitals and other community agencies.

Preparation for Course

P: BIOL 204, NUR 115, PCTX 201; C: BIOL 220.

Cr. 6.

Hours

Class 4, Lab. 6.

Program Requirements

LPN - B.S. Core Credits: 61

- NUR (elective) Credits: 3

NUR 103 - Professional Seminar I: Communications, Ethics and Diversity

Introduction to the role of the registered nurse involving history of nursing, professionalism, code of ethics, cultural sensitivity, and therapeutic communication. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are initiated.

Preparation for Course

P: ENG W131

Cr. 2.

NUR 117 - LPN Nursing Mobility Seminar

LPN Nursing Mobility Seminar is designed to meet the specific needs of the licensed practical nurse (LPN) pursuing educational requirements necessary for an Associate of Science in nursing and for registered nurse (RN) licensure examination. The NUR 117 Seminar course offers increased depth to the existent knowledge and experience of the LPN with emphasis on the Neuman Systems Model (NSM) and the nursing process. Therapeutic communication skills are reviewed. Information regarding intravenous therapy and blood product transfusion is included. Demonstration of computer skills and knowledge of pharmacology are also incorporated. Students may take NUR 224 or NUR 336 with NUR 117.

Preparation for Course

P: 24 credit hours in General Education

Cr. 1.

NUR 241 - Psychiatric Mental Health Nursing B

This didactic and clinical nursing course introduces concepts specific to the care of patients/clients experiencing alterations with mental health. The study of personality development, psychology, and sociologic concepts from previous social science and nursing courses are integrated throughout the course. The assessment, application of the nursing process, critical thinking, communication skills, and therapeutic use of self are emphasized specific to the related psychopathology. Clinical experiences are provided in hospitals and other community mental health agencies.

Preparation for Course

P: NUR 115 or P: or C: NUR 117.

Cr. 4.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 336 - Nursing IIIB: Medical-Surgical Nursing of Adults

This course utilizes the nursing process in caring for clients who experience complex problems related to selected basic human needs. Laboratory experiences are provided in hospitals and other community-related agencies.

Preparation for Course

P: NUR 202; P: or C: NUR 117, 334, 346, FNN 303.

Cr. 7.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters of normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 368 - Maternity Nursing B

Applies the nursing process and an eclectic nursing theory model in caring for the emerging family group throughout the maternal cycle. Laboratory experiences are provided in hospitals. The student will be involved with community agencies offering care to the pregnant family.

Preparation for Course

P: NUR 202 or C: 117.

Cr. 3.

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 379 - Caring for Children and Families B

Emphasizes the role of the nurse in assisting children and families of all cultural backgrounds in health promotion, maintenance, and restoration. Utilizes critical thinking, culturally sensitive age-appropriate communication, technical skills, leadership/management skills, growth and development concepts, and the nursing process to care for children with diseases unique to childhood. Laboratory experiences focus on pediatric healthcare in the community, as well as the acute care setting.

Preparation for Course

P: NUR 336; C: FNN 303.

Cr. 3.

Hours

Class 2, Lab. 3,

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C: NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 433 - Advanced Concepts in Critical Thinking

This course will help students apply advanced concepts in critical thinking. Teaching strategies challenging the learner to apply critical thinking include the use of scenarios, integrations of computer-assisted learning, and exploration of effective healthcare delivery. Computerized testing is utilized to prepare students for NCLEX-RN examination. This course must be taken the last semester of the baccalaureate degree program.

Preparation for Course

P: NUR 418, 442; C: NUR 419.

Cr. 1.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 pr 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

NUR Elective

- NUR (elective) Credits: 3

Supporting Course Credits: 49

- Credits in COM - 300-400 level Cr. 3.

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material,

transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PCTX 201 - Introductory Pharmacology

An introduction to the pharmacological basis of therapeutics. This course involves an integration of knowledge of anatomy, physiology, microbiology, and chemistry with the biological and selected chemical and physical actions and reactions of drugs. Primarily for students in nursing and other paramedical programs.

Preparation for Course

P: BIOL 203 or equivalent, CHM 104 or equivalent; C: BIOL 204 or equivalent.

Cr. 3-4.

Session Indicators

(fall, spring, summer)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose from the following Credits: 3

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Total Credits: 110 + 13 earned additional awarded credits = 123

Nursing (RN - B.S.)

Program: RN B.S.

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

The student learning outcomes for the degree are as follows:

- Validate professionalism through awareness, assertiveness, accountability, and advocacy.
- Critique leadership skills in directing healthcare activities: influencing and adapting to change.
- Evaluate complex issues/problems in the healthcare arena using critical thinking skills.
- Integrate the delivery of culturally competent nursing care in a variety of settings through the utilization of the NSM, other theories, and research.
- Justify effective, therapeutic, culturally sensitive communication techniques that are appropriate for the situation and audience.
- Evaluate the impact of generated information on healthcare outcomes.

Career Steps

The Bachelor of Science completion (RN-BS) curriculum is uniquely designed for associate degree or diploma registered nurses, working full or part-time, who wish to step up to baccalaureate degree. It is designed to meet the student's professional goals in a flexible environment. Included in the program are two clinical practicums in a variety of acute, long-term, and community settings. Advising is personalized.

Nursing Program Admission Criteria

Admission into the RN-B.S. nursing program requires that the applicant be a graduate of a state-accredited associate degree or diploma program in nursing and have a minimum cumulative GPA of 2.3 on a 4.0 scale. A current Indiana nursing license is required prior to taking the first clinical nursing course.

Credit required from the lower division includes:

- 34 credits nursing
- 15 credits in biological and physical sciences - must include 3 credits of chemistry
- 3 credits humanities (English)
- 6 credits behavioral sciences (psychology & sociology or anthropology).

Program Requirements

Credits from the A.S. in nursing: 58

Nursing Core Credits: 38

- NUR Elective 3 credits

NUR 442, NUR 418, and NUR 419: student may pick 2 of the 3 clinicals

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 337 - Statistics and Data Management in Health Sciences

Instruction in parametric and non-parametric statistics, their use in research and journal publications, and interpretation of statistical tests in journal articles. Data management and statistical analysis using SPSS. Students will also learn how to present results of the statistical analysis for publication.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Hours

Class 5, Lab. 6,

NUR 339 - Research in Healthcare

Provides the opportunity to explore the methodology and significance of the research process relative to healthcare settings. Strategies are identified to analyze research reports and transfer relevant findings to research-based practice. (General Study Area VI Inquiry and Analysis)

Preparation for Course

P: or C: ENG W233, NUR 337 or PSY 201 or SPEA K300 or STAT 125 or STAT 301.

Cr. 3.

NUR 344 - Introduction to Healthcare Informatics

This course provides an introduction to healthcare informatics, exploring its past, present, and future impact on healthcare management and delivery. It includes discussion of the concepts of technology, information management, and information literacy. Technology-based healthcare applications are explored.

Preparation for Course

P: or C: ENG W233.

Cr. 2.

NUR 346 - Advanced Health Assessment

This course is designed to increase nursing skills in the collection and interpretation of psychosocial, developmental, and physical health data. Through the data-gathering process, the physical and psychosocial aspects of the individual's health status are examined. The skills of history taking and the performance of a basic physical assessment are emphasized. College laboratories provide opportunity for supervised practice with well adult peers. The course content and the course objectives from which they are derived include areas of history taking, communication techniques, recognition of the parameters or normal, psychomotor skills of physical examination, safe use of diagnostic equipment, identification of health problems, and the integration of the data-gathering process into the total nursing process with the formulation of nursing diagnoses.

Preparation for Course

P: NUR 130.

Cr. 2.

Hours

Class 1, Lab. 3,

NUR 377 - Professional Seminar II: Concepts and Trends in Healthcare Delivery

In this seminar course, students explore nursing concepts/theories, healthcare delivery systems, and contemporary nursing and healthcare issues. The Neuman Systems Model, as the guiding framework for the baccalaureate nursing program, will be emphasized. Special attention will focus on cultural diversity and the Nurse Practice Act. Application of writing skills to the discipline of nursing is emphasized. Professional portfolios are reviewed and further developed.

Preparation for Course

P: NUR 103; P: or C: NUR 379 or NUR 279.

Cr. 3.

NUR 418 - Community/Public Health Nursing

Blends the profession of nursing with the science of public health. Nursing and other theories are applied in the community setting. Survey social and health trends which affect community health nursing practice. Emphasize preventive care across the life span using the nursing process in the community setting. Examine nursing of aggregates and epidemiology as a public health science. Home healthcare and case management as a component of community health nursing are examined. Assess environmental and other current community health issues; examine the community health nurse's role in working with these issues. Assess the importance of cultural differences, norms, and values when planning care for diverse populations in the community. Clinical provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Only RN completion students may select variable credit for one of the three 400 level clinical nursing courses (NUR 418, NUR 419, NUR 442). the three credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377, 379 or NUR 279, P: or C: NUR 339, 337 or SPEA K300 or PSY 201 or STAT 301.

CR. 3-5.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

NUR 423 - Professional Seminar III: Healthcare Policies and Ethical Issues

This is a professional seminar course designed for the graduating nursing student. Seminar emphasis will focus on policy development, legislative process, and political influences which impact the practice of professional nursing. Professional nursing organizations, role transition, and lifelong learning are explored. Professional portfolio development is completed. Must be taken in the last semester prior to graduation.

Preparation for Course

P: NUR 377, 418, 442; C: NUR 419.

Cr. 2.

NUR 442 - Leadership in Nursing

Concepts presented focus on leadership. Leadership is viewed as interpersonal action which influences group members, through the communication process, toward setting and attaining goals. Clinical experiences provide opportunities to apply leadership, organization, change, communication, teaching/learning, and nursing theories to practice. Conflict management strategies are examined and utilized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies with clients from diverse backgrounds. Aspects of community/public health nursing and leadership are integrated in the senior clinical courses. Only RN completion students may select variable credit for one of the three 400-level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 336 or 224, 377; P: or C: NUR 279, 337, 339, 379 or SPEA K300 or PSY 201 or STAT 125 or 301.

Cr. 5.

Supporting Courses Credits: 18

- Credits in communication at the 300-400 level Credits: 3
- Credits in humanities (General Education IV) Credits: 6
- Credits in elective (General Education V) Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Total Credits: 56

Organizational Leadership and Supervision (B.S.)

Program: B.S.

Division of Organizational Leadership and Supervision

College of Engineering, Technology, and Computer Science

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will show an awareness of the cultural context of organizations and demonstrate their ability to work with diverse others.
- Students will be able to design, lead and participate in a multi-disciplinary team environment.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will be able to adapt to and to manage organizational transformations and to be informed and engaged participants in such processes.

- Students will demonstrate an understanding of the professional and ethical implications and responsibilities of leadership.
- Students will demonstrate effective oral and written communication skills.
- Students will be able to analyze and solve problems occurring within organizations.
- Students will be critical readers and better consumers of behavioral science research.
- Students will be able to examine their own behaviors and beliefs about organizations and contrast them with the theories and observations of others.
- Students will be able to manage their environment by planning for and using current technology, tools, and processes.

The bachelor's program focuses on leadership roles, the human relations concerns of supervisors and human resource issues. Courses emphasize current and future workplace topics, such as teamwork and work groups, facilitation skills, employee training and development, individual creativity and innovation, workforce diversity, employee health and safety, and overseeing change.

To earn the B.S. with a major in organizational leadership and supervision, you must satisfy the requirements of IPFW (see Part 8) and the College of Engineering, Technology, and Computer Science, Division of Organizational Leadership and Supervision (see Part 4); earn a grade of C or better in ENG W131, ENG W233 (or approved substitute), and each OLS course; and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

OLS Core and Major Courses

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

OLS 454 - Gender and Diversity in Management

The workforce of the future will represent multiple differences, including gender, race, culture, ethnicity, physical abilities, and age. Following this broad-based perspective of diversity, this course will focus on using knowledge of diversity to develop the leadership potential of individuals in organizations.

Preparation for Course

P: 252 or instructor permission; junior or senior class standing.

Cr. 3.

OLS 474 - Conference Leadership

The practical application of presenting technical information and conducting problem-solving and decision-making conferences or meetings. Emphasis is placed on leading and facilitating interactive conferences as well as structuring information for effective presentations.

Preparation for Course

P: 375 and COM 114; junior or senior class standing.

Cr. 3.

OLS 475 - Topics: Contemporary Supervisory Training Issues

This course will build on the topics covered in OLS 375. Topics will include needs analysis, advanced training and development methods, techniques of evaluation, and meeting the job-training needs of special groups. Additional topics of special interest will be covered.

Preparation for Course

P: 375; junior or senior class standing.

Cr. 3.

OLS 485 - Leadership for Team Development

An in-depth study of self-directed work teams and team processes in the work setting with a view to understanding team functions under varying task conditions. Especially emphasized will be the leadership of teams for effective performance and maximum member satisfaction. This course deals extensively with maintenance and task behaviors of team members.

Preparation for Course

P: 252 and 274; junior or senior class standing.

Cr. 3.

OLS 496 - Leading Change: Theory and Practice

This course is designed to assist students in integrating leadership theories and modeling change initiatives. A final synthesis project is required.

Preparation for Course

P: OLS 252 and senior class standing.

Cr. 3.

OLS Electives Credits: 9

See the OLS advisor for a list of approved OLS electives.

Technical Support Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

Choose from the following: Credits: 3

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

COM 323 - Business and Professional Speaking

The study of oral communication problems and responsibilities in the business-organizational environment. Participation in problem-solving from investigation and informative speaking to advocacy and parliamentary debate. This course is not available for credit toward any communication major or minor.

Preparation for Course

P: 114.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

Choose from the following: Credits: 3

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Concentration Credits: 21

In consultation with IPFW academic departments, OLS has compiled interdisciplinary career concentrations such as:

Human Resource Development
Human Resource Management
Environmental Health and Safety
Electrical Engineering Technology
Government
Health Services
Hotel, Restaurant, Tourism Management
Industrial Engineering Technology
Interior Design
Information Systems
Journalism
Public Relations
Quality Control
Service Industry

A minor may be substituted for the concentration. See the OLS academic advisor for additional information.

Unrestricted Electives Credits: 9

Total Credits: 123

Note

Lists of specific courses required for each career concentration are available at the OLS office (Neff 288). Other options for filling this requirement include using an IPFW-recognized minor as a basis for your concentration area or designing a concentration that reflects your own career goals. Your proposal for an alternative concentration and a formal plan of study must be accepted by an OLS faculty advisor and approved by the OLS chair. If your plan is approved, it will become a formal part of your degree requirements.

Special Academic Regulations for Organizational Leadership and Supervision Degree Programs

Transfer students and students planning to change their major to organizational leadership and supervision must have a GPA of 2.00 or higher to be admitted into the program. A cumulative GPA of 2.0 or above is also required to remain in the division.

OLS, business, and technical courses taken more than 10 years ago will not count towards your degree requirements.

Students receiving credit for cooperative education experience can use these credits as unrestricted electives only.

If you have not registered for degree-applicable courses as an IPFW OLS major for four consecutive semesters (excluding summer), you must satisfy the degree requirements specified in the IPFW Bulletin that includes your year of re-entry.

Philosophy (B.A.)

Program: B.A.

Department of Philosophy

College of Arts and Sciences

Classroom-Medical Building 23~ 260-481-6366 ~ www.ipfw.edu/phil

The student learning outcomes for the degree are as follows:

- Possess general knowledge and critical appreciations of western and non-western philosophical thought, its principles branches and their history.
- Acquisition and honing of close reading, creative writing, and critical thinking skills.

The major in philosophy is a traditional humanities and liberal-arts program covering the principal branches and divisions of philosophy including their history. The philosophy major is good preparation for graduate study in philosophy. The philosophy major also serves as a preprofessional program for the ministry, law, or health sciences. It is often encouraged for a student to be a double major in philosophy and something else.

To earn the Bachelor of Arts with a major in philosophy, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought

See Part 2 General Education Requirements for approved courses

- Additional credits in Area IV Credits: 3

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHIL) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in PHIL)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Core and Concentration (Major) Courses

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

PHIL 450 - Symbolic Logic

Topics considered include advanced techniques of the logic of quantification, identity, and definite description, intuitive set theory, Russell's paradox, and modal logic.

Preparation for Course

P: 150 or consent of instructor.

Cr. 3.

Credits in two of the following: Credits: 6

PHIL 301 - History of Ancient Philosophy

A survey of Greek philosophy from its beginning in the Milesian school through the Presocratics to Plato and Aristotle.

Preparation for Course

P: PHIL 110

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 302 - History of Medieval Philosophy

A survey of the main trends and figures of medieval philosophy, with an emphasis on metaphysics, epistemology, and ethics. Readings (in English translation) may include Augustine, Boethius, Avicenna, Anselm, Abelard, Maimonides, Aquinas, Scotus, Ockham, and Suarez.

Preparation for Course

P: PHIL 110

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

Additional credits in PHIL courses, including one at the 500 level Credits: 9

General Elective Courses

Sufficient additional credits to bring the total to 124.

Total Credits: 124

Physics (B.S.)

Program: B.S.

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will investigate physical phenomena using multiple approaches
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms

This program helps you prepare for graduate study in physics or for careers in industry. You may also be interested in physical science teaching certification (listed separately in this Bulletin).

If you wish to transfer to physics from another degree program, you must have an average of C or better in all physics and mathematics courses you have completed and not more than one grade below C in those courses.

To remain in the degree program, you must maintain a GPA of 2.0 or higher in physics courses. You may take a minor of 24–30 credits in a second science or in engineering. For this minor, a plan of study is developed with your advisor. You may substitute courses in the minor for PHYS 361. Typical minor programs chosen by physics majors are mathematics and electrical engineering.

To earn the B.S. with a major in physics, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

(credits included in Supporting Courses, below)

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

(credits included in Supporting Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

(credits included in Major Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHYS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 8

Core and Concentration (Major) Courses

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

One of the following: Credits: 3

- Additional credits in mathematics

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Supporting Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Physics Teaching (B.S.)

Program: Physics Teaching B.S.
Department of Physics
College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms
- Will be aware of effective teaching techniques for physics
- Will be aware of appropriate physics laboratory methods

This program helps you prepare for teaching physical science in the high schools. You may also be interested in physical science teaching certification (listed separately in this Bulletin).

You should work closely with your academic advisor to ensure completion of general-education requirements for teacher certification. To be certified to teach, you must have a GPA of 2.0 or higher in the general-education areas of humanities and social and behavioral sciences. Additionally, you must have a GPA of 2.5 or higher in your major and the professional-education course area with an overall GPA of 2.5 or higher. Each professional-education course must be completed with a grade of C or better.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam in physics must be completed before or during the student-teaching semester, normally in your senior year.

If you wish to transfer to physics teaching from another degree program, you must have an average of C or better in all physics and mathematics courses you have completed, and not more than one grade below C in those courses.

To earn the B.S. with a major in physics teaching, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Credits: 0

(credits included in Supporting Courses, below)

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area II—Natural and Physical Sciences

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA

113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Credits: 0

(credits included in Supporting Courses, below)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Credits: 0

(credits included in Major Courses, below)

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PHYS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Core and Concentration (Major) Courses

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Supporting Courses

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry;

atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Teacher Education Program Requirements

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area) Credits: 4

Total Credits: 125

Political Science (B.A.)

Program: B.A.

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- To have a basic and advanced knowledge of the discipline including major theories and approaches.
- To have an appreciation of the significance of and commitment to the American republic
- To have writing skills needed to communicate knowledge and ideas.
- To have a knowledge and historical understanding of texts and authors that have shaped political thought, speech, and practice.
- To be able to assess research and to determine its validity and to also be able to judge the appropriateness of the statistics used and of conclusions derived from such empirical research.
- To gain an appreciation of the diversity of political practices and forms of government that exist and to be able to compare these systems and different approaches.
- To have the knowledge of the international system and the political activities that occur within it.
- To be prepared to work in the political system (either directly in government or with parties and other organizations that are effectively part of the system) or with groups that work in the political system enabling them to critically analyze situations and engage in problem solving.
- To be prepared to be active and involved citizens in the local community, the nation, and beyond.
- To be prepared for employment in areas directly drawing upon their knowledge of the subject matter, including government service and teaching.
- To be prepared for graduate study in political science or related disciplines or for study at law school.
- To have access to practical work experience through internships and practicums to gain practical work experience.
- To instill in students the need to behave professionally, accept dissent collegially, to respect diversity, and to maintain an ethical approach to their course of study, their work, their role as citizens, and life in general.

To earn the B.A. with a major in political science, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in POLS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in POLS)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

- POLS Yxxx - additional POLS credits, 100 level or above Cr: 6.
- POLS Yxxx - additional POLS credits, 200 level or above Cr: 15.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

POLS Y490 - Senior Seminar in Political Science

Open to senior majors and others with consent of instructor. Readings and discussion of selected problems; research paper ordinarily required. May be repeated once for credit with a different topic.

Preparation for Course

P: Y205 or consent of instructor.

Cr. 3.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in political science and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Notes

Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 credits for the major; these two courses together may not count for more than 9 credits for the major.

Psychology (B.A.)

Program: B.A.

Department of Psychology

College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate knowledge of the major theoretical approaches, findings, and historical trends in psychology.
- Students will demonstrate the ability to understand the major research methods in psychology, including ethical standards, design, data analysis, and interpretation.
- Students will demonstrate the ability to think critically and to use the scientific approach to understand behavior.
- Students will demonstrate the ability to apply concepts, information, and skills learned in psychology courses to their lives and work.
- Students will demonstrate the ability to effectively locate and evaluate sources of information.
- Students will demonstrate the ability to express themselves effectively in the discourse of the discipline.
- Students will demonstrate the ability to understand people from a diverse range of backgrounds and varying demographic characteristics such as age, race, disability, sexual orientation, class, ethnicity, religion, and cognitive abilities.
- Students will demonstrate the ability to make decisions about future employment or graduate education.

The Bachelor of Arts with a major in psychology is for the person seeking a career in psychology or a closely related field. The degree program provides a liberal-arts education in psychology as well as preparation for graduate school. A current IPFW student must have a cumulative GPA of 2.0 to declare psychology as a major. After two consecutively-enrolled semesters in which a psychology major's cumulative GPA falls below 2.0, the student will no longer be eligible to be a psychology major. Two subsequent consecutive semesters with the cumulative GPA at or above 2.0 will permit a student to petition for reinstatement as a psychology major.

To earn the B.A. with a major in psychology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), in addition to fulfilling the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social

issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit: 0

(credits included in Major Courses, below)

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in PSY) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing courses)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in PSY)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

PSY 100 - Introduction to the Science and Fields of Psychology

An introduction to psychology as a science and as a profession.

Preparation for Course

P: PSY 120; strongly recommended that course be taken within the first 13 credits in the major.

Cr. 1.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 203 - Introduction to Research Methods in Psychology

The use of scientific method in psychology. Lecture covers principles of collecting and interpreting data, using examples of research from many areas of psychology. In the laboratory portion, the student uses many different techniques from various areas of psychology.

Preparation for Course

P: PSY 201; R: ENG W233.

Cr. 3.

Hours

Class 2, Lab. 2.

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

Three of the following: Credits: 9

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 and PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 and PSY 369

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

One of the following: Credits: 3

PSY 441 - Advanced Research in Personality and Social Psychology

In this course, students will have the opportunity to develop an advanced understanding of the principles, concepts, theories, and research methods used by personality and social psychologists. This course will demand a high level of student participation and responsibility in two broad ways. First, in place of standard lectures, students will be asked to actively participate in class discussions and demonstrations of central topics. Second, students will gain "hands-on" experience by conducting an empirical study pertaining to personality and social psychology, and by engaging in a variety of laboratory exercises.

Preparation for Course

P: PSY 203, and one of the following: PSY 240, or PSY 420.

Cr. 3.

PSY 480 - Field Experience in Psychology

Supervised volunteer field work experiences in a setting appropriate to students' interests and goals. Intended as an opportunity to integrate theory and practice. (May be repeated once for credit with permission of instructor.)

Preparation for Course

P: consent of instructor.

Cr. 3.

PSY 490 - Practicum in Psychotherapy

Students are introduced to the theories and practice of psychotherapy through seminar discussion, role-played practice, supervision, and live observation of on-going psychotherapy cases in the departmental clinic.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Hours

Class 2, Clinic 2.

PSY 499 - Honors Thesis in Psychology

Individual, original research especially encouraged for students considering graduate school. May be based on either data collection or a theoretical synthesis of previous research. The topic is selected by the student with approval from a

thesis advisor who, along with a thesis advisory committee, evaluates the finished paper according to departmental standards.

Preparation for Course

P: PSY 201 and PSY 203, a 3.0 (B) GPA, and consent of thesis advisor. For psychology majors only.

Cr. 3.

PSY 540 - History of Psychology

A review of the philosophical, theoretical, and methodological issues that entered into the development of modern psychology. Emphasis is placed on historical themes that continue to be active in the science and profession of psychology.

Preparation for Course

P: senior class standing and 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PSY 550 - Introduction to Clinical Psychology

The case-study method, including a discussion of the importance of historical information, the contribution of clinical tests to diagnosis, and a general survey of prevention and treatment techniques.

Preparation for Course

P: 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Additional credits in psychology at the 200 level or above Credits: 9

3 credits must be taken at IPFW

Successful completion of the Major Field Test in Psychology

General Elective Courses

Sufficient additional credits to bring the total to 124.

Total Credits: 124

Public Affairs (B.S.P.A.)

Program: Bachelor of Science in Public Affairs

The student learning outcomes for the degree are as follows:

Students should be able to:

- Understand fiscal management of public agencies.
- Apply techniques of revenue administration, debt management, and public budgeting.
- Understand origins, processes, and impact of law in the creation and implementation of public policy.
- Understand the capabilities of management science.
- Appropriately use quantitative approaches for dealing with management and policy problems.

The B.S.P.A. degree program provides a background in the liberal arts and a focus on public affairs. This degree offers majors in criminal justice, environmental policy, health services administration, legal studies, and public management. In addition, a specialized study major may be developed with the approval of a faculty advisor and the program director to meet special career needs. Internships are available and strongly encouraged to provide qualified students with the opportunity to apply classroom theory and techniques to real-life experiences. The internship program is designed for maximum flexibility; internships can be full or part time, paid or unpaid, credit or noncredit.

The DPEA curriculum is divided into four categories — general education, public affairs core, a major area, and general electives. The B.S.P.A. requires a minimum of 120 credit hours with a 2.0 or higher cumulative grade-point average and a 2.3 or higher grade-point average in core and major courses. No more than 90 credits may be transferred from other accredited institutions (60 credits from a junior college). No more than 10 credits can be taken by correspondence through the IU School of Continuing Studies. A maximum of 10 credits may be applied from military experience, and a maximum of 12 credits may be awarded for police academy training completed within the past year. Courses taken to meet specific DPEA degree requirements cannot be used to satisfy any other DPEA degree requirement, but may be double-counted to satisfy the IPFW general-education distribution requirements.

To earn the Bachelor of Science in Public Affairs at IPFW, you must fulfill the requirements of IPFW (see Part 8) and the Division of Public and Environmental Affairs, and complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations Credits: 9

Area I - Reading/Writing Credits: 3

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

Area I - Listening/Speaking Credits: 3**COM 114 - Fundamentals of Speech Communication**

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area I - Quantitative Reasoning Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting:

Some courses may be used to fulfill both Quantitative Reasoning and the DPEA Quantitative Methods requirements.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting:

Some courses may be used to fulfill both Natural and Physical Sciences Requirements and the DPEA Natural Sciences Requirements.

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both The Individual, Culture, and Society requirements and DPEA Arts and Humanities requirements or DPEA Social and Behavioral Sciences requirements.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both Humanistic Thought and the DPEA Arts and Humanities requirements.

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both the Creative and Artistic Expression requirement and a DPEA Arts and Humanities requirement or a Social and Behavioral Science requirement.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Note on double counting

Some courses may be used to fulfill both the Inquiry and Analysis requirement and a DPEA Arts and Humanities requirement or a Social and Behavioral Sciences requirement.

Division of Public and Environmental Affairs

I. General Education Courses Credits: 53

A. Communication Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following courses:

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

B. Quantitative Methods Credits: 9

Three credits in computer literacy skills from the following:

BUS K200 - Computer Literacy Concepts for Business

Orientation to microcomputer hardware, software markets, and operating systems. Emphasis on end-user computer responsibilities for managers.

Cr. 0.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

One of the following mathematics courses:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following statistics courses:

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

C. Arts and Humanities Credits: 12

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

Arts & Humanities Electives

Choose two courses (six credits) from at least two of the following subject areas:

Classical Studies, Communication, English, Film, Fine Arts, Folklore, Foreign Language, History, Honors (Humanities only), Music, Philosophy, Theatre

D. Natural Sciences Credits: 8

Select Natural Science credits totaling 8:

A minimum of 6 credits must be from the following University approved General Education Area II courses.

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 250 - Women and Biology

An examination of modern concepts in biology. The scientific method will be examined and feminist criticisms of science will be discussed. The topics of reproduction and development, heredity, and ecology will be used as focal points for an in-depth discussion of the conceptual framework of biology and feminist criticism thereof. Cannot be used for Group A or B elective for biology majors. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Preparation for Course

P: sophomore standing. For nonmajors.

Cr. 3.

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems. Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 120 - Chemistry and Art

This course is designed to introduce students majoring in fields outside the physical and life sciences to the basic principles of chemistry. These principles will be presented in the context of the materials used by visual artists to produce and preserve paintings, ceramics, metalworks and photographs.

Cr. 3.

Hours

Class 3, Lab. 3.

Session Indicators

Fall

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOG G109 - Weather and Climate

Introduction to atmospheric processes responsible for weather changes. Elements of climatology and their variation in time and space. Weather forecasting, weather modification, and severe weather.

Cr. 3.

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL S100 - General Geology (Honors)

Survey of physical geology and introduction to historical geology. Similar to G100 except students also participate in a 10-14 day field exploration of some region in North America. (Field trip in May after classes end.) Credit given for only one of the following: G100, S100, or G103.

Preparation for Course

P: consent of instructor, MA 153 placement, ENG W131 placement, and exemption from or completion of ENG R150.

Cr. 5.

Session Indicators

(Alternate springs)

IDIS G102 - Freshman Seminar/Physical and Natural World

Introduction to scientific study of the physical and natural world. Interdisciplinary approach integrating mastery of subject-matter content with improvement of learning strategies, critical thinking, and problem solving.

Cr. 3.

Variable Title

(V.T.)

Notes

Meets criteria of IPFW General Education Area II. Topic varies. Open only to freshmen. Credit for only one of: IDIS 110, G102, G103, G104.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 115 - Introduction to Lasers

Two-hour lecture and two-hour laboratory class about the theory and operation of lasers. Lectures will discuss basic optics; the operation of lasers; laser safety; and the uses of lasers in science, industry, construction, communication, entertainment, and medical fields. Laboratory will reinforce classroom discussions. Class intended for nonphysics majors.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 120 - Physics of Sports

This course enables students to learn fundamental physical principles and concepts from examples of situations occurring in sports. The numerous recent applications of physics toward enhancing sports performance, both by improving techniques and equipment, will be selectively studied. Physical concepts such as velocity and acceleration, force, momentum, impulse, rotational motion, torque, pressure, fluid flow, energy, and power will be introduced and exemplified through sports. The course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 127 - Physics for Computer Graphics and Animation

A study of the physics of light and its interactions with objects as these topics apply to the production of computer-generated images. The course will investigate light and color through observation and the use of 3-D graphics programs. In particular how light interacts with surfaces and how we see will be explored in order to understand how to make graphic images that appear true to life.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 132 - Concepts in Physics II

A continuation of PHYS 131.

Preparation for Course

P: 131.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 135 - The First Three Minutes

This course is a descriptive introduction to the major concepts of contemporary physics and their relationship to theories of the origin of the universe. The course presents a historical survey of cosmological thought, leading to today's recent developments. Topics include stars and galaxies, the four forces, relativity, quantum physics, elementary particles, and the Big Bang. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 136 - Chaos and Fractals

This course explores novel ideas in geometry and dynamical systems as they appear in natural phenomena. Irregular patterns in nature can be understood in terms of a fractal geometry. Physical processes that appear to be random actually obey a deterministic law. The concepts of chaos and fractals help us to understand these processes. The course is intended for non-science majors. There is no need for a background in college math. However, knowledge of mathematics at high school level is required.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

E. Social and Behavioral Sciences Credits: 15**ECON E201 - Introduction to Microeconomics**

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

SPEA V371 - Financing Public Affairs

A survey of economic and political theories of market failures, public expenditure evaluation, economic stabilization, systems of redistribution and fiscal federalism. Examples and applications to contemporary government decisions.

Preparation for Course

P: V170, ECON E201, E202.

Cr. 3.

Social & Behavioral Science Electives

Choose two courses (six credits) from the following subject areas:

Anthropology, Criminal Justice (for non-Criminal Justice majors), Economics, Geography (selected), Journalism, Linguistics, Political Science, Psychology, Sociology, Women's Studies

II. Public Affairs Core Credits: 12

A grade of C or better is required in each of these courses.

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA H120 - Contemporary Health Issues

An examination of current public health, environmental health, and health service delivery issues in the United States. Topics include the organization and costs of health systems, access to care, and the interrelationships between risk factors and health; also environmental challenges facing our society and their impact on health.

Cr. 1-3.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

III. Major Credits: 27 to 30

A. Criminal Justice Credits: 30 - Charles "Bud" Meeks Criminal Justice Program

SPEA J201 - Theoretical Foundations of Criminal Justice Policies

This course examines the impact of sociological, biological, and economic theories of crime and the practice of criminal justice. Focus is upon the nature and importance of theory, context of theoretical developments, methods for the critical analysis of theoretical developments, and policy implications of the varying perspectives considered.

Preparation for Course

P: J101.

Cr. 3.

SPEA J202 - Criminal Justice Data, Methods, and Resources

Course examines basic concepts of criminal justice. Students become familiar with research techniques necessary for systematic analysis of the criminal justice system, offender behavior, crime trends, and program effectiveness. Students will learn to critically evaluate existing research. Students will become familiar with existing sources of criminal justice data and will learn to assess the quality of that data.

Preparation for Course

P: J101.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J306 - The Criminal Courts

An analysis of the criminal justice process from prosecution through appeal. The organization and operation of felony and misdemeanor courts are examined. Topics include prosecutorial decision-making; plea-bargaining; judicial selection; and the conduct of trials, sentencing, and appeal.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J321 - American Policing

This course will examine the history, evolution, and organization of policing in the United States. Emphasis is placed on such major contemporary issues as the police role, discretion, use of force, corruption, accountability, and community policing.

Preparation for Course

P: J101; R: J201, J202.

Cr. 3.

SPEA J331 - Corrections

This course examines the historical development of the American correctional system; the study of administration of local, state, and federal corrections programs, including jail, probation, community corrections, and prisons. Includes the study of punishment rationales, current correctional policies, and possibilities for reform.

Preparation for Course

P: J101; R: J201, J202.

Cr. 3.

SPEA J439 - Crime and Public Policy

A detailed examination of the major efforts designed to control or reduce crime. A review of existing knowledge is followed by an investigation of current crime control theories, proposals, and programs.

Preparation for Course

P: J101; senior standing or consent of instructor.

Cr. 3.

Additional SPEA Electives Approved By Advisor Credits: 9

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

B. Environmental Policy Credits: 27

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

SPEA H316 - Environmental Health Science

A study of human interaction with the environment and potential impacts of environmental agents on health and safety. Hazards from natural sources and human activities that contaminate our air, land, water, food, homes, neighborhoods, and workplaces are examined. Environmental control activities, including pollution control technology and policy, are also examined.

Cr. 3.

SPEA H416 - Environmental Health Policy

Study of professional requirements and duties of the environmental health functions within health agencies; consideration of applicable laws and standards in each environmental health function; environmental evaluation, implementation, and personnel responsibilities.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

Either of the following environmental science courses:

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

12 credits chosen from the following:

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E401 - Ecology and Culture

How human beings, nature, and culture interrelate. Examination of the varied approaches used in hunting, agricultural, and industrial societies for adapting to the physical environment.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

PHIL 328 - Ethics and Animals

A study of traditional philosophical positions on questions of animal rights. Topics covered typically include human rights and doctrines of duty and obligation, vivisection, animals and food, extinction, the pet industry, hunting, the fur industry, and animal-rights organizations.

Cr. 3.

POLS Y367 - International Law

Sources and consequences of international law; relationship to international organizations and world order; issues of national sovereignty, human rights, conflict resolution, international property rights, world trade, environmental change, and other topics.

Preparation for Course

P: Y109 or consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S360 - Topics in Social Policy

Specific topics to be announced, e.g., environmental affairs, urban problems, poverty, population problems. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

SOC S318 - Social Change

Introduction to theoretical and empirical studies of social change. Explores issues such as modernization; rationalization; demography, economic, and religious causes of change; reform and revolution.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S333 - Collective Behavior and Social Movements

Considers various types of non-institutionalized collective behaviors (such as rumors, urban legends, panics, riots) in past and modern American history as well as theories and cases of the "why" and "how" of social movements, counter-movements, and revolutions.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA V365 - Urban Development and Planning

This course identifies the major problems associated with urban development in the United States and investigates the potential of public planning strategies and tools to deal with these problems. An emphasis is placed on the application

of analytical approaches to problem definition and solution.

Preparation for Course

P: V264, K300.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

SPEA V390 - Readings in Public Affairs

Independent readings and research related to a topic of special interest to the student. Written report required. May be repeated for credit.

Preparation for Course

P: permission of instructor.

Cr. 1-3.

SPEA V450 - Contemporary Issues in Public Affairs

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

(topic must be approved by faculty advisor)

SPEA V465 - Geographic Information Systems for Public and Environmental Affairs

Students will learn the concepts, methodologies, and perspectives essential for using geographic information systems (GIS) to address critical public affairs issues. Through course projects, students will learn how to use desktop and Internet-based GIS applications and will develop complementary skills related to designing and implementing GIS applications for public-sector organizations.

Preparation for Course

P: CS 106.

Cr. 3.

SPEA V490 - Directed Research in Public and Environmental Affairs

To be arranged with the individual instructor and approved by the chairperson of the undergraduate program.

Cr. 1-3.

Notes

May be repeated for credit.

C. Health Services Administration Credits: 27

SPEA H320 - Health Systems Administration

An overview of the U.S. healthcare delivery system. Examines the organization, function, and role of the system; current system problems; and alternative systems or solutions.

Cr. 3.

SPEA H322 - Principles of Epidemiology

A basic overview of epidemiologic methodology and techniques. Both communicable and chronic disease risk factors will be discussed, along with data acquisition, analysis techniques, and current published epidemiological studies.

Cr. 3.

SPEA H352 - Health Finance and Budgeting

A study of the financial management of healthcare facilities based on generally accepted business principles. Accounting and managerial control of cash, accounts receivable, inventory control, budgeting and cost control, as well as accounting and evaluation of short- and long-term debt will be examined.

Cr. 3.

SPEA H402 - Hospital Administration

The study of organization, structure, function, and fiscal operations within hospitals. The role of the hospital in the community, relationship to official and voluntary health agencies, coordination of hospital departments and managerial involvement will be examined.

Preparation for Course

P: H320.

Cr. 3.

SPEA H411 - Chronic and Long-Term Care Administration

Administering programs across the continuum of care including nursing homes, hospice, home health, and assisted living; Medicare and Medicaid financing; quality improvement; care management; and needs of special populations, particularly, vulnerable elders.

Cr. 3.

One of the following:

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

Additional 9 credits of DPEA electives approved by advisor

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

D. Legal Studies Credits: 30

POLS Y211 - Introduction to Law

An introduction to law as a method for dealing with social problems and as an aspect of the social and political system. An introduction to legal reasoning, procedures, and materials. Will usually include comparison of United States and other societies and their approaches to law.

Cr. 3.

POLS Y304 - Constitutional Law

American political powers and structures; selected Supreme Court decisions interpreting American constitutional system.

Preparation for Course

P: Y103 or equivalent and consent of instructor.

Cr. 3.

POLS Y305 - Constitutional Rights and Liberties

Extent and limits of constitutional rights; selected Supreme Court decisions interpreting American constitutional system.

Preparation for Course

P: POLS Y103 or equivalent and consent of instructor.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

SPEA V377 - Legal Process and Contemporary Issues in America

An introduction to the American legal system, including the Constitution, courts system, and administrative law in federal and state agencies. Readings and discussion center around current issues affected by the legal process.

Preparation for Course

P: V376.

Cr. 3.

SPEA V405 - Public Law and the Legislative Process

This course focuses on Congress as a policy-making body in the U.S. public law system. It covers the constitutional framework for congressional operations as well as technical aspects of the legislative process such as bill drafting and analysis, the role of leadership, and the prerogatives of individual members.

Cr. 3.

Elective Courses Credits: 12

Choose 4 courses from the following. A minimum of 6 credits must be SPEA courses.

BUS L303 - Commercial Law II

Emphases on Uniform Commercial Code (sales, negotiable instruments, and secured transactions), business organizations and relationships, bankruptcy, and the law of ownership, custody, and possession. Required for business B.S. majors in the accounting concentration.

Preparation for Course

P: BUS L200; admission to business B.S. or P.B.A. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Sawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST H260 - History of Women in the United States

How have women's lives changed from the colonial period to the 20th century? This introductory survey focuses on women's historical roles in the workplace, the family, and politics. Material will be drawn from legal, constitutional, political, social, demographic, economic, and religious history. Credit not given for both H216 and H260.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

JOUR J300 - Communications Law

History and philosophy of laws pertaining to free press and free speech. Censorship, libel, contempt, obscenity, right of privacy, copyright, government regulations, and business law affecting media operations. Stresses responsibilities and freedoms in a democratic communications system. Required course for journalism majors and IPFW journalism minor. Also required course for radio and television students.

Cr. 3.

PHIL 260 - Philosophy and Law

A discussion of philosophical issues in the law. Topics will include a critical examination of such basic concepts in law as property, civil liberty, punishment, right, contract, crime, and responsibility; and a survey of some main philosophical theories about the nature and justification of legal systems. Readings will be drawn from both law and philosophy.

Cr. 3.

POLS Y328 - Women and the Law

Exploration of origins and underlying rationale of women's status in the American legal tradition and the role that law plays in helping to shape political climate and structure of the nation. Course will provide basic knowledge of various fields of law as they pertain to women.

Cr. 3.

SOC S317 - Social Stratification

Nature, functioning, and maintenance of systems of social stratification in local communities and societies. Correlates and consequences of social class position and vertical mobility.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA H441 - Legal Aspects of Healthcare Administration

An overview of the liability and legal responsibility, as well as legal recourse healthcare facilities may exercise. This course will discuss policies and standards relating to health facility administration. Also included is a discussion of financial aspects unique to the hospital/healthcare facility environment, such as third-party payments and federal assistance.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

SPEA J302 - Procedural Criminal Law

Criminal law application and procedure from the initiation of police activity through the correctional process utilizing the case-study method.

Preparation for Course

P: J101.

Cr. 3.

SPEA V406 - Public Law and the Electoral Process

The purpose of this course is to facilitate understanding of the interaction of electoral politics and policy. It covers the legal framework of the evolution of the "right" to vote, the impact of the judiciary on the structure of elections, limitations on campaign practices, and the importance of legislative districting and its control.

Cr. 3.

SPEA V456 - Topics in Public Law

Extensive analysis of selected contemporary issues in public law. Topics vary from semester to semester. May be repeated for credit.

Cr. 3.

E. Public Management Credits: 27

SPEA V263 - Public Management

This course is an examination of the management process in public organizations in the United States. Special attention will be given to external influences on public managers, the effects of the intergovernmental environment, and in particular, problems of management in a democratic, limited government system.

Cr. 3.

SPEA V264 - Urban Structure and Policy

An introduction to urban government and public policy issues. Topics include urban government structure and policy making, the economic foundations and development of cities, demography of cities and suburbs, land-use planning, and other selected urban policy problems.

Cr. 3.

SPEA V348 - Management Science

Introduction to management-science models and methods for policy analysis and public management. Methods include decision analysis, linear programming queuing analysis, and simulation. Computer-based applications are included. Prior familiarization with computers is recommended, though not required.

Preparation for Course

P: K300, MA 153 or MA 213.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

Three Additional SPEA Electives Approved By Advisor Credits: 9

A maximum of 6 credits may be earned in SPEA V380, Internship in Public Affairs.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

F. Specialized Study Major Credits: 27

This major is intended for students, often working professionals, with special needs regarding a course of study in Public Affairs. The courses for the major must be approved by a faculty advisor in the Division of Public and Environmental Affairs. The minimum guidelines are nine courses at the 300-400 level, four of which must be SPEA courses.

IV. General Electives Credits: 25–28

Additional courses of interest should be selected to raise the total credits to the required 120 for the BSPA degree. Students majoring in Criminal Justice or Legal Studies need an additional 25 credits minimum. Students majoring in Environmental Policy, Health Services Administration, Public Management, or Specialized Study need an additional 28 credits minimum.

Total Credits: 120

Secondary Education-Adolescence/Young Adulthood Concentration (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in secondary education is intended to prepare students for successful careers as teachers of children in middle school/junior high and high school settings. The secondary education degree is divided into two concentrations: early adolescence, for middle school/junior high settings, and adolescence/young adulthood, for high school settings. Pre-service teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, and the other requirements listed under Teacher Licensure in the Special Academic Regulations, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in secondary education with a concentration in adolescence/young adulthood, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

School Setting: High School (grades 9-12)

General Education Credits: 45

School of Education Credits: 34

Content Area Majors, variable credits depending on the program

Elective credits variable, but must be at least 124.

IPFW General Education Requirements Credits: 45

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
(grade of B or better required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Any college-level math including: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions.

Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 9

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3

Two of the following: Credits: 6

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

astronomy, chemistry, geology, or physics

Area III—The Individual, Culture, and Society Credits: 9

See Part 2 General Education Requirements for approved courses

One of the following: Credits: 3

- American history or world history or humanities (FWAS H201 or H202)

One of the following: Credits: 3

- political science or sociology

One of the following: Credits: 3

- anthropology, business, economics, folklore, journalism, linguistics, psychology, or public and environmental affairs

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- English Literature Credits: 3

One of the following: Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

or fine arts or music

One of the following: Credits: 3

- film or philosophy or theatre

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI- Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

Prior to being admitted to the Block 1: Teacher Education program you must complete the following initial requirements:

- PPST (Pre-Professional Skills Test)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education**EDUC H340 - Education and American Culture**

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (P: Block 1)**EDUC M201 - Laboratory/Field Experience**

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

One methods course from your content major: Credits: 3

EDUC M443 - Methods of Teaching High School Social Studies

Public school participation required.

Cr. 3.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC M447 - Methods of Teaching High School English

Public school participation required.

Cr. 3.

EDUC M448 - Methods of Teaching High School Mathematics

Cr. 2-4.

Credits: 3

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

and

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

Block 3: Teaching Major

In addition to the above courses, you must complete one content area major. See list of majors and courses below.

Student Teaching

- EDUC M501 *Portfolio* Cr. 0

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Optional:

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(for Middle School Endorsement area)

Credits: 4

Electives (Variable)

Total Credits: 124

Core Content Area Majors

Below is a list of teaching content area majors.

Earth and Space Science Teaching Major (39–40 credits)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G210 - Oceanography

Introduction to the study of the oceans and marine processes. Topics include morphology of the ocean floor, life in the ocean, oceanic circulation, and submarine geology. Three lectures or two lectures with occasional laboratory-demonstration per week.

Preparation for Course

P: one college-level science course or written consent of the instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G334 - Principles of Sedimentology and Stratigraphy

Processes and factors influencing genesis of sedimentary strata: provenance, depositional environment, sedimentary facies, and paleoecology. Analytical techniques and application of principles of interpretation of stratigraphic record. Laboratory study of sediments, sedimentary rocks, and subsurface samples, logs, and seismic records.

Preparation for Course

P: GEOL G222; C: GEOL G319 or consent of instructor. Interrelationship of sedimentation and stratigraphy.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of the following: Credits 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

w/GEOL L100

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

w/GEOL L100

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Two of the following: Credits: 6

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

French Teaching Major (46 credits)

- FREN F3xx-4xx - Literature Electives (300–400 level) Credits: 6
- FREN F3xx-4xx - Electives (300–400 level) Credits: 9

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II**Preparation for Course**

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

Credits: 3

One of the following: Credits: 3

FREN F463 - Civilisation Francaise I

French civilization from medieval period through 17th century.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

German Teaching Major (44 credits)

- GER 3XX - Literature Elective (300 level) Credits: 3
- GER G3xx - Elective (300 level) Credits: 3
- GER G4xx - Electives (400 level) Credits: 12

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

One of the following: Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

GER G463 - German Culture

Taught in German.

Preparation for Course

P: 6 credits of 300-level work or departmental permission.

Cr. 3.

GER G464 - Kultur Und Gesellschaft

The interaction of social, intellectual, and artistic forces in German life in the last one to two centuries, stressing interdisciplinary aspects.

Preparation for Course

P: GER G463.

Cr. 3.

Language Arts (English) Teaching Major (39 credits)

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W400 - Issues in Teaching Writing

Focuses on the content of rhetoric and composition and considers fundamental theoretical and practical issues in the teaching of writing. Reviews rhetorical and compositional principles that influence writing instruction, textbook selection, and curriculum development.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

One of the following in writing: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Two of the following in language study Credits: 6

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G301 - History of the English Language

Historical and structural analysis of English language in stages of its development. Political and social events affecting development of language; interrelationship of language and literature, evolution of modern English phonology, syntax, orthography, and lexicon.

Preparation for Course

P: ENG G205 or LING L103.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

One of the following in pre-1700 British literature: Credits: 3

ENG L220 - Introduction to Shakespeare

Shakespeare's best-known plays and poems. Credit not given for both L220 and L315.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

If you are required by placement examination to take ENG P131, or R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L301 - Critical and Historical Survey of English Literature I

Representative selections with emphasis on major writers from the beginnings to Swift and Pope.

Preparation for Course

P: ENG L202, or W233 or equivalent.

Cr. 3.

ENG L304 - Old English Language and Literature

Language and literature of England before the Norman Conquest, with intensive study of original texts.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L305 - Chaucer

Examination of The Book of the Duchess, The Parliament of Fowls, Troilus and Criseyde, and selected Canterbury Tales to acquaint students with the language, conventions, and background of Chaucer's poetry.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L306 - Middle English Literature

A survey of Middle English lyrics, drama, and romance, with special attention to Langland, The Pearl-poet, and Gower, designed to acquaint the student with the language and literary development of England from 1066 to 1500.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L308 - Elizabethan Drama and Its Background

English drama from Middle Ages to 1642, including principal Elizabethan and Caroline dramatists and their best plays.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L309 - Elizabethan Poetry

Major Elizabethan poets, with special attention to Spenser.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L315 - Major Plays of Shakespeare

A close reading of a representative selection of Shakespeare's major plays. Credit not given for both L220 and L315.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L317 - English Poetry of the Early 17th Century

Chief poets and their intellectual milieu (1600-1660).

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L318 - Milton

Poetry and prose of John Milton, with special attention to Paradise Lost, Paradise Regained, and Samson Agonistes.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following in post-1700 British literature: Credits: 3

ENG L302 - Critical and Historical Survey of English Literature II

Representative selections with emphasis on major writers from the rise of romanticism to the present.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L322 - English Literature, 1660-1789

Survey of nondramatic literature of the Restoration and 18th century. Emphasis on Dryden, Pope, Swift, and Johnson and his circle.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L332 - Romantic Literature

Surveys the principal writers of the Romantic Movement (Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats).

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L335 - Victorian Literature

A survey of English poetry and prose from about 1832 to 1900. Attention to figures like Tennyson, Browning, and Carlyle.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L345 - 20th Century British Poetry

Modern poets, particularly Yeats, Eliot, Auden; some later poets may be included.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L346 - 20th Century British Fiction

20th century novel and its techniques and experiments, chiefly Lawrence, Joyce, Woolf, and recent novelists.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L347 - British Fiction to 1800

Forms, techniques, and theories of fiction as exemplified by such writers as Defoe, Richardson, Fielding, Smollett, and Sterne.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L348 - 19th Century British Fiction

Forms, techniques, and theories of fiction as exemplified by such writers as Scott, Dickens, Eliot, and Hardy.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in American literature: Credits: 3

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L354 - American Literature Since 1914

Provides an understanding of the pivotal literary innovations and cultural changes during this period. Literary movements such as naturalism, realism, and modernism may be the subject of focus, as might changes in race and

gender relations, labor politics, immigration policies, regionalism, and the increasing shift from agricultural to urban economics.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L357 - 20th Century American Poetry

American poetry since 1900, including such poets as Pound, Eliot, Frost, Stevens, Williams, and Lowell.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L358 - 20th Century American Fiction

American fiction since 1900, including such writers as Dreiser, Lewis, Fitzgerald, Hemingway, Faulkner, and Bellow.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

ENG L372 - Contemporary American Fiction

American fiction of the last 20 years, including such writers as Bellow, Barth, Didion, Malamud, Pynchon, and Updike.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L381 - Recent Writing

Selected writers of contemporary significance. May include groups and movements (such as black writers, poets of projective verse, new regionalists, parajournalists and other experiments in pop literature, folk writers, and distinctly ethnic writers); several recent novelists, poets or critics; or any combination of groups.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in ethnic, minority, or non-Western: Credits: 3

ENG L107 - Masterpieces of Asia

An introduction to the literature of Asia focusing on literary masterpieces of India, China, Japan, and other countries.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L108 - Introduction to Contemporary Literature

Significant fiction and drama of the past 20 years. The course may emphasize traditional writers such as Updike and Solzhenitsyn, or experimentalists such as Robbe-Grillet and Brecht.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ENG L369 - Studies in British and American Authors

Studies in single authors (such as Wordsworth or Melville), groups of authors (such as minority writers), periods (such as American writers of the 1920s), and genres (such as tragedy). Topics will vary from semester to semester.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

ENG L379 - American Ethnic and Minority Literature

A survey of representative authors and works of American ethnic and minority literature with primary focus on black, Hispanic, and Native Americans.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L381 - Recent Writing

Selected writers of contemporary significance. May include groups and movements (such as black writers, poets of projective verse, new regionalists, parajournalists and other experiments in pop literature, folk writers, and distinctly ethnic writers); several recent novelists, poets or critics; or any combination of groups.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated with different topics for a maximum of 9 credits.

One of the following in Western literature, other than British or American:

Credits: 3

CLAS C205 - Classical Mythology

An introduction to Greek and Roman myths, legends, and tales, especially those that have an important place in the Western cultural tradition.

Preparation for Course

P: ENG 131 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

CLAS C405 - Comparative Mythology

The advanced study of Classical Greek and Roman myths, including the reading and evaluation of comparative myths, both inside and outside the Mediterranean cultural area.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3-4.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L362 - Modern Drama

Special attention to Ibsen, Strindberg, Chekhov, Brecht, Shaw, and O'Neill.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following in mass communications, film, or journalism: Credits:
3

COM 210 - Debating Public Issues

Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods and bibliography, identification and analysis of issues, construction and organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.

Preparation for Course

P: 114.

Cr. 3.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

One elective in English, linguistics, or mass communications (other than COM 114) Credits: 3

Social Studies Teaching Major (51–60 credits)

Must complete all course work in 3 content areas plus one course from each of the other two content areas (diversified credit) to complete the major.

Economics (15 credits)

- Economics elective Credits: 3
- Economics elective (300–400 level) Credits: 3

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Government and Citizenship (15 credits)

- Political science electives (300–400 level) Credits: 6

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

Two of the following: Credits: 6

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Historical Perspectives (24 credits)

American Civilization

- HIST elective (American) Credits: 3
- HIST elective (American) (300–400 level) Credits: 3

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

World Civilization

- HIST elective (non-American) Credits: 3
- HIST elective (non-American) (300–400 level) Credits: 3

HIST H113 - History of Western Civilization I

Ancient civilization, Germanic Europe, feudalism, medieval church, national monarchies, Renaissance.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

HIST H114 - History of Western Civilization II

Reformation, Age of Louis XIV, French Revolution, Napoleonic Era, Revolutions of 1848, liberalism, socialism, nationalism, international rivalries, World War I, Russian revolutions, Nazi Germany, World War II, Cold War. H113 is not a prerequisite for H114.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Psychology (15 credits)

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

One PSY Elective Credits: 3

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Sociology (15 credits)

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits 3

SOC S318 - Social Change

Introduction to theoretical and empirical studies of social change. Explores issues such as modernization; rationalization; demography, economic, and religious causes of change; reform and revolution.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S330 - Sociological Social Psychology

Examines the reciprocal link between the individual and the larger society. Topics covered include self-concept and its development, deviant types, status, power, exchange, justice issues, human motivation, attribution, equity.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Each of the following Credits: 9

- SOC elective Credits: 3
- SOC electives (300–400 level) Credits: 6

Diversified Credits: 6

Spanish Teaching Major (53 credits)

- SPAN S4XX Elective (400 level) Credits: 3

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301-S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Notes

Students completing the adolescence/young adulthood concentration may also add additional middle school/junior high teaching areas by completing any of the middle school/junior high endorsements and completing a middle school practicum.

Other IPFW departments offer degrees that lead to teacher certification. They include art education, biology, chemistry, mathematics, music education, and physics. Please refer to these departments in their appropriate Part 4 sections of this Bulletin for more information and course requirements.

Secondary Education-Early Adolescence Concentration (B.S.Ed.)

Program: B.S.Ed.

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

The student learning outcomes for the degree are as follows:

- Becoming more caring, humane and functional citizens in a global, multicultural, democratic society
- Improving the human condition by creating positive learning environments
- Becoming change agents by demonstrating reflective professional practice
- Solving client problems through clear, creative analyses
- Assessing client performance, creating and executing effective teaching, counseling, and educational leadership by utilizing a variety of methodologies reflecting current related research
- Utilizing interdisciplinary scholarship, demonstrating technology and critical literacies, and effectively communicating with all stakeholders.

The B.S.Ed. in secondary education is intended to prepare students for successful careers as teachers of children in middle school/junior high and high school settings. The secondary education degree is divided into two concentrations: early adolescence, for middle school/junior high settings, and adolescence/young adulthood, for high school settings. Pre-service teachers must choose one or both concentrations to complete the degree. Upon satisfactory completion of the program, and the other requirements listed under Teacher Licensure in the Special Academic Regulations, you are eligible to apply for an Indiana teaching license.

To earn the B.S.Ed. in secondary education with an early adolescence concentration, you must satisfy the requirements of IPFW (see Part 8) and the School of Education.

School Setting: Middle School/Junior High (grades 6-8)

General Education Credits: 45

School of Education Credits: 34

Content Area Minors (must select 2) Credits: 48

Some content area minor credits will overlap with general education credits.

- Language Arts Credits: 24
- Mathematics Credits: 24
- Science Credits: 24

- Social Studies Credits: 24

Elective credits variable, but must be at least 124.

IPFW General Education Requirements Credits: 45

Area I—Linguistic and Numerical Foundations Credits: 12

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

(a grade of B or better is required)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Any college-level math including: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 9

See Part 2 General Education Requirements for approved courses

- Biology Credits: 3
- Two of the following: Credits: 6

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

astronomy, chemistry, geology, or physics

Area III—The Individual, Culture, and Society Credits: 9

See Part 2 General Education Requirements for approved courses

One of the following: Credits: 3

- American history or world history or humanities (FWAS H201 or H202)

One of the following: Credits: 3

- political science or sociology

One of the following: Credits: 3

- anthropology, business, economics, folklore, journalism, linguistics, psychology, or public and environmental affairs

Area IV—Humanistic Thought Credits: 9

See Part 2 General Education Requirements for approved courses

- English literature Credits: 3

One of the following: Credits: 3

INTR 220 - Architecture and Urban Form

Survey of styles and influence of cultures that led to the development of architecture and engineering from the earliest times to the early 20th century.

Cr. 3.

or fine arts or music

One of the following: Credits: 3

- film or philosophy or theatre

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

School of Education Requirements

Initial Requirements:

- PPST (Pre-Professional Skills Test)

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching - Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

(a grade of B or better is required)

Block 1: Teacher Education

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC S405 - The Middle and Junior High School

The course provides future middle school and junior high teachers with an understanding of how early adolescent students and school structures impact curriculum, instruction, and classroom management decisions. The course meets the middle/junior high school endorsement requirement for elementary school majors.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Block 3: Core Content Area Minors

In addition to the above courses, you must complete 24 credit hours in two of four core content area minors (See course requirements for core content area minors listed below)

Student Teaching

- EDUC M501 - Portfolio Credits: 0

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Optional:

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(for an additional concentration area)

Credits: 4

Electives (Variable)

Total Credits: 124

Core Content Area Minors (24 credits)

In addition to the above courses, you must complete 24 credit hours in two of four core content area minors.

Language Arts (24 credits)

- British literature elective (300 level or higher) Credits: 3
- American literature elective (300 level or higher) Credits: 3

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Mathematics (24 credits)

- Computer science elective Credits: 3
- Mathematics, computer science, or statistics electives Credits: 2–3

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(or waiver)

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

(or higher)

One of the following: Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Science (24 credits)

- Science electives Credits: 0-2

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.
and

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of the following: Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Social Studies (24 credits)

- American History Credits: 3
- Sociology Credits: 3
- Political Science Credits: 3
- Social Studies electives Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Sociology (B.A.)

Program: B.A.

Department of Sociology

College of Arts and Sciences

Classroom-Medical Building 241 ~ 260-481-6842 ~ www.ipfw.edu/sociology

The student learning outcomes for the degree are as follows:

- **Theoretical:** Graduates will be able to analyze and evaluate major theoretical perspectives in sociology.
 - Graduates should be able to identify the general theoretical orientation.
 - Graduates should be able to apply theoretical analyses of social structure and social processes.
 - Graduates should be able to interpret social issues in terms of the major theoretical perspectives.
- **Methodological:** Graduates will be able to utilize and evaluate research methods and data analysis used in sociology.

- Graduates should be able to demonstrate appropriate use of both quantitative and qualitative methodologies.
- Graduates should be able to evaluate different research methods.
- Graduates should be able to interpret the results of data gathering.
- Graduates should be able to demonstrate appropriate use of statistical techniques.
- Graduates should be able to demonstrate competent use of statistical software.
- **Critical Thinking:** Graduates will be able to evaluate critically arguments and situations.
 - Graduates should be able to critically evaluate theoretical arguments.
 - Graduates should be able to develop evidence-based arguments.
 - Graduates should be able to critically evaluate published research.
- **Communication Skills:** Graduates will be able to communicate effectively in both written and oral form.
 - Graduates should be able to write a research report.
 - Graduates should be able to develop an oral research report.
- **Professional Ethics:** Graduates will be knowledgeable of appropriate ethics concerning both professional conduct and the use of human subjects.
 - Graduates should demonstrate a mastery of the ethical standards for conducting research with human subjects.
 - Graduates should demonstrate an understanding of the ethical standards of the American Sociological Association.

Courses in sociology provide an understanding of society and of the relationship between the individual and society. Studies in sociology help to prepare you for graduate school and careers in the social services, law, human relations, criminal justice, government, education, and mass media.

Although a minor is not required, study in an outside area is recommended. Anthropology, computer science, economics, history, labor studies, political science, psychology, organizational leadership and supervision, and women's studies support the major well.

To earn a B.A. with a major in sociology, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and satisfactorily complete the following courses.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

See Part 2 General Education Requirements for approved courses

- Additional credits in Area III Credits: 3

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SOC) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

SOC S260 - Intermediate Sociological Writing

Introduction to the analysis of social issues. Emphasis on the development of writing skills appropriate to the discipline. Approved by Arts and Sciences for use in fulfilling the writing requirement.

Preparation for Course

P: SOC S161 and ENG W131 (or equivalent); restricted to sociology majors.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.
(credits included in Major Courses, below)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in SOC)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Requirements in Arts and Sciences Part D Credits: 6

Core and Concentration (Major) Courses

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S260 - Intermediate Sociological Writing

Introduction to the analysis of social issues. Emphasis on the development of writing skills appropriate to the discipline. Approved by Arts and Sciences for use in fulfilling the writing requirement.

Preparation for Course

P: SOC S161 and ENG W131 (or equivalent); restricted to sociology majors.

Cr. 3.

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement.

SOC S340 - Social Theory

Sociological theory, with focus on content, form, and historical development. Relationships among theories, data, and sociological explanation.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S352 - Methods of Social Research

Introduction to methods of sociological research. Topics covered include qualitative and quantitative research methods, research design and implementation, experiments, survey research techniques, field research techniques, data collection, data analysis, and the ethical concerns of social research.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

or

SOC S470 - Senior Seminar

Capstone seminar in sociology; integrates knowledge on theory and practice from previous sociology courses, with emphasis on historical, contemporary, and future issues in sociology.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor. Class restricted to sociology majors with senior class standing.

Cr. 3.

Variable Title

(V.T.)

Sociology Elective Courses Credits: 15

All additional sociology elective courses must be at the 200 level or above; 9 of the 15 credit hours must be at the 300 level or above.

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Spanish (B.A.)

Program: B.A.

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, and culture in preparation for graduate studies or for a career where proficiency in a foreign language and international perspectives are important assets;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

To earn the B.A. with a major in Spanish, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) and satisfactorily complete the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SPAN) Credits: 3

Recommended:

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different

topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

College of Arts and Sciences Requirements

English Writing Credits: 0

- (requirement is satisfied by ILCS I300, listed below)

Foreign Language (10–14 credits)

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

or

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised

lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Additional Foreign Language Requirements

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Distribution (not in SPAN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in Western tradition Credits: 3
- Non-Western culture requirement may be satisfied with one of the following courses Credits: 0

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S479 - Mexican Literature

Mexican literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S480 - Argentine Literature

Argentine literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Core and Concentration (Major) Courses

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

One of the following courses in Spanish linguistics: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating topics course and may only count in the area of the specific topic.

One of the following courses in Spanish literature: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301–S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating course and may only count in the area of the specific topic.

One of the following courses in Spanish-American literature: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S495 - Hispanic Colloquium

Topic and credit may vary. May be repeated for credit with a different topic.

Preparation for Course

P: SPAN S301–S302 and consent of department chair.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

The S495 course is a rotating course and may only count in the area of the specific topic.

Additional credits in 400-level Spanish civilization, language, or literature courses Credits: 6

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Spanish with Teacher Certification (B.A.)

Program: B.A. with Teacher Certification

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

The student learning outcomes for the degree are as follows:

- Acquire a broad foundation in language, literature, culture and a knowledge of current methodologies in foreign language pedagogy;
- Achieve the ACTFL intermediate-high level in speaking, demonstrate the ability to recognize and analyze grammatical and usage errors in own and others' writing;
- Develop an increased understanding of what it means to belong to a culture and awareness of how culture affects other interconnected issues of identity;
- Demonstrate the ability to think critically about these issues and how they shape intercultural communication.

Students pursuing a B.A. with a major in Spanish with teacher certification must fulfill the requirements of IPFW (see Part 8), the College of Arts and Sciences (see Part 4), and the School of Education (see Part 4) and satisfactorily complete the following requirements.

Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The Praxis II, Spanish: Content Knowledge test must be completed before or during the student-teaching semester, normally in your senior year.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in SPAN) Credits: 3

Recommended:

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

College of Arts and Sciences Requirements**English Writing Credits: 0**

(requirement is satisfied by ILCS I300, listed below)

Foreign Language (10–14 credits)**SPAN S111 - Elementary Spanish I**

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

or

SPAN S113 - Accelerated First Year Spanish

Required beginning course for students with at least two years of high school Spanish who did not place into S203 or higher. Review of selected material from S111 before proceeding to S112 material. Weekly attendance at supervised lab required. Credit will not be given for both S112 and S113.

Preparation for Course

P: two years of high school Spanish (grades 9–12).

Cr. 4.

Hours

Class 4, Lab. 1.

Additional Foreign Language Requirements

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Distribution (not in SPAN)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Credits in Western tradition Credits: 3
- Non-Western culture requirement may be satisfied with the following courses Credits: 0

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S479 - Mexican Literature

Mexican literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S480 - Argentine Literature

Argentine literature from Independence to present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Core and Concentration (Major) Courses

ILCS I300 - Methods of Research and Criticism

Study of methods of literary analysis and bibliographical documentation. Basic techniques of research, footnoting, and intensive writing. Critical approaches to drama, novel, and poetry. Approved by Arts and Sciences for use in fulfilling the sophomore writing requirement.

Preparation for Course

P: ENG W131 or equivalent and two years of college foreign language.

Cr. 3.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following courses in Spanish linguistics: Credits: 3

SPAN S425 - Spanish Phonetics

Introduction to basic linguistics and phonology. Intensive patterned pronunciation drills and exercises in sound discrimination and transcription based on articulatory description of standard Spanish of Spain and Latin America. Attendance in audio laboratory required.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S426 - Introduction to Spanish Linguistics

General aspects of Spanish linguistics: traditional, descriptive, historical, and dialectal.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S428 - Applied Spanish Linguistics

Analysis of linguistics and cultural elements of Spanish phonology, morphology, syntax, and semantics as they bear on teaching.

Preparation for Course

P: LING L103 or other course work in linguistics and S301–S302 or instructor permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following courses in Spanish literature: Credits: 3

SPAN S407 - Survey of Spanish Literature I

A historical survey that covers major authors, genres, periods, and movements from the Spanish Middle Ages through the baroque period of the 17th century. Readings include prose works, poetry, and drama.

Preparation for Course

P: SPAN S301-S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

SPAN S408 - Survey of Spanish Literature II

A historical survey of Spanish literature that covers the main current of Spain's literary history in the 18th, 19th, and 20th centuries. Readings in prose, poetry, and drama by Larra, Perez Galdós, Unamuno, García Lorca, and other representative writers.

Preparation for Course

P: SPAN S301–S302.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following courses in Spanish-American literature: Credits: 3

SPAN S471 - Spanish-American Literature I

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S472 - Spanish-American Literature II

Introduction to Spanish-American literature from the colonial period to the present.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

One of the following culture/civilization courses: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Additional credits in 400-level Spanish civilization, language, or literature courses Credits: 3

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block II

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M445 - Methods of Teaching Foreign Languages

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Speech and Hearing Therapy (B.S.)

Program: B.S.

Audiology and Speech Sciences

College of Arts and Sciences

Neff Hall 279 ~ 260-481-6410 ~ www.ipfw.edu/aus

The student learning outcomes for the degree are as follows:

- Students will acquire basic knowledge of the normal nature and development of speech.
- Students will acquire basic knowledge of language and hearing.
- Students will acquire basic knowledge of assessment, treatment and prevention of speech, language and hearing disorders.
- Students will demonstrate basic clinical skills of assessment.
- Students will demonstrate basic skill in the design and implementation of appropriate treatment plans.
- Students will acquire oral and written communication abilities and interpersonal skills needed for the assessment and treatment of speech, language and hearing disorders.

This preprofessional degree helps you prepare to pursue the master's degree in speech-language pathology or audiology and the following professional credentials: the Indiana Schools Standard Services-Specialist License, the license from

the Indiana Speech-Language Pathology and Audiology Board, and the Certificate of Clinical Competence from the American Speech-Language-Hearing Association. With full academic preparation, including a master's degree in speech-language pathology or audiology, you may begin human-service careers working with children, adults, and/or older persons who have speech, language, or hearing disorders. You will offer professional assistance to enhance our most distinctive human ability — communication.

The curriculum offers courses and practical experiences that prepare you to work with communicatively disabled individuals in such settings as schools, hospitals, agencies, rehabilitation centers, clinics, and private practices. Beginning practicum courses prepare the student to work with clients. These practicum courses offer services through the speech-language clinic to the campus and surrounding community.

To earn the B.S. with a major in speech and hearing therapy, you must fulfill the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4) in addition to the following requirements:

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
required

Area III—The Individual, Culture, and Society Credits: 6

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

required; select one course from

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.
or

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.
or

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

recommended

Area V—Creative and Artistic Expression Credits: 3

Select one:

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

MUS L153 - Introduction to Music Therapy

Introduction to the influences of music on behavior, the healing properties of music, the use of music therapy with a variety of populations, and the development of the music therapy profession. Includes an introduction to the clinical process and music therapy procedures as well as participation in experiential activities. Approved general education course in artistic expression.

Cr. 3.

Session Indicators

(fall, spring, summer)

recommended

Area VI—Inquiry and Analysis (not in AUS) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing Credits: 3

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language Credits: 8

- *Foreign Language (111 and 112)*

Core and Concentration (Major) Courses

AUS 115 - Introduction to Communicative Disorders

Nature, symptoms, and causes of communicative disorders and the principal methods used for remediation.

Cr. 3.

AUS 302 - Acoustic Bases of Speech and Hearing

The physical characteristics of speech sounds and the psychophysical processes involved in hearing.

Cr. 3.

Hours

Class 2, Lab. 2.

AUS 304 - Anatomy and Physiology of the Speech and Hearing Mechanism

An introduction to the anatomical and physiological bases of normal and abnormal voice, articulation, and hearing. Lab includes demonstrations and exercises to support lecture materials.

Preparation for Course

P: BIOL 203 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2.

AUS 306 - Introduction to Phonetics

An introduction to articulatory phonetics, speech sounds in languages of the world, and principles and symbols of the International Phonetic Alphabet. Extensive practice in phonetic transcription.

Cr. 3.

Hours

Class 3.

AUS 309 - Language Development

Specific nature, sequence, and pattern of oral language development from birth through adolescence. Nature of language acquisition and approaches to the study of children's language are presented. Linguistic and psychological explanations of the sequence of development are discussed.

Cr. 3.

AUS 420 - Introduction to Developmental Speech and Language Disorders

Introduction to disorders of speech and language in children. Characteristics of these disorders, methods of evaluation, and intervention procedures are discussed.

Preparation for Course

P: AUS 115, 306, 309.

Cr. 3.

AUS 460 - Introduction to Assessment Audiology

Authorized equivalent courses or consent of instructor may be used in satisfying course prerequisites. History of audiology, normal and abnormal processes of hearing, basic methods of audiological assessment, and introduction to the development and management of hearing-conservation programs. Laboratory provides practical instruction in the procedures discussed in class.

Preparation for Course

P: AUS 302 and 304 or equivalent.

Cr. 4.

Hours

Class 3, Lab, 2.

AUS 516 - Foundations of Assessment in Communication Disorders

An introduction to general principles of evaluation and assessment of communication disorders and to specific assessment tests.

Preparation for Course

P: AUS 115, 302, 304, 306, and 309.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

AUS 521 - Phonetic and Phonological Disorders in Children

A detailed study of phonetic and phonological aspects of speech sound disorders in children. Recent research findings dealing with normal and disordered development are reviewed. Advanced procedures for diagnosis and intervention are discussed.

Preparation for Course

P: AUS 306 and 309.

Cr. 2.

Dual Level Course

Undergraduate-Graduate

Credits from the following courses:

Students intending to pursue graduate studies are urged to select AUS 449 and should also consider completion of AUS 549. If 549 is not selected, then 590 should be the selection.

AUS 181 - First Course in American Sign Language

Basic manual communication skill including the American manual alphabet, approximately 550 basic signs, and the history and place of manual communication in society. Designed to give the students minimum vocabulary and skills in

communicating with individuals who are dependent on this form of communication.

Cr. 3.

AUS 182 - Second Course in American Sign Language

Development of conversational skills, vocabulary, and basic grammar of sign language.

Preparation for Course

P: AUS 181 or equivalent.

Cr. 3.

AUS 399 - Directed Study in Audiology and Speech Sciences

Special projects such as directed readings, independent and/or cooperative research on professionally relevant topics under the guidance of an AUS faculty member.

Cr. 1-3.

AUS 405 - Augmentative and Computer Applications in Speech and Language

An introductory overview with emphasis on potential application in assessment, treatment, research, and administrative functions related to communication disorders.

Preparation for Course

P: one disorders course (AUS 420, 430, 521).

Cr. 3

AUS 430 - Speech-Language Disorders in Healthcare Settings

Presents speech-language disorders across the lifespan encountered in a variety of healthcare settings. Discusses the etiology, evaluation, and management of these disorders. Addresses administrative structures, team approaches, and reimbursement issues in healthcare settings.

Preparation for Course

P: 5 semester credits in speech pathology or consent of instructor.

Cr. 3

AUS 449 - Introduction to Clinical Practice in Speech-Language Pathology

The first in a series of practicum courses designed to provide instruction and practical experience in basic diagnostic procedures and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 115, 304, 306, 309; minimum grade of B in AUS 420, 521; overall GPA and in major of 3.0, and consent of instructor.

Cr. 2-3.

Hours

Class 2-4.

AUS 549 - Clinical Practice in Speech/Language Pathology I

The second in a series of practicum courses designed to provide instruction and practical experience in fundamental diagnostic and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 420, 449, 521 or equivalents, with a grade of B or better in each course. R: AUS 430 or equivalent and consent of instructor.

Cr. 1-8.

Hours

Class 1, Lab. 1-8.

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

AUS 550 - Aural Rehabilitation for Adults

Theoretical and clinical implications associated with the rehabilitation of hearing loss in adults and geriatric adults. Discussion centers on a family-centered team approach, built upon the effective use of amplification and other assistive devices.

Preparation for Course

P: AUS 460 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2.

Dual Level Course

Graduate-Undergraduate

AUS 551 - Aural Rehabilitation for Children

An overview of the effects of hearing impairment on language, speech, academic, and psychosocial development. Topics also include communication modalities, and principles and current practices for assessment and intervention.

Preparation for Course

P: AUS 460 or equivalent or consent of instructor.

Cr. 3.

Hours

Class 3.

Dual Level Course

Undergraduate-Graduate

AUS 590 - Directed Study of Special Problems

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

General Elective Courses

You may wish to consider elective courses that fulfill requirements for a minor that supports preparation of AUS majors. Sufficient additional credits to bring the total to 124. Recommended:

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

COM 303 - Intercultural Communication

An exploration of the impact of culture on perception and communication, the obstacles affecting intercultural communication, the impact of ethnocentrism and the challenges facing cultures with broad cultural and subcultural diversities. Open to majors and nonmajors.

Preparation for Course

P: COM 114.

Cr. 3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 124

Theatre (B.A.)

Program: B.A.

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

The student learning outcomes for the degree are as follows:

- Demonstrate an understanding of the creative process using the vocabulary of the appropriate discipline.
- Perform or create a work of personal expression and bring the work to fruition using applicable skills.
- Articulate a reflective and critical evaluation of their own and other's efforts using written and/or oral communication.

To earn the B.A. with a major in theatre, you must satisfy the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4), complete the following courses, earn a grade of C or better in each theatre course, and fulfill additional requirements specified in the theatre student handbook:

IPFW General Education Requirements (36 credits)

Area I—Linguistic and Numerical Foundations Credits: 9

- Reading/Writing Credits: 3
- Quantitative Reasoning Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to

informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Or

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

- May not use THTR-prefixed course to fulfill requirement

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

- May not use THTR-prefixed course to fulfill requirement.

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Writing Requirements

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Theatre Core Courses (42 credits)

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 158 - Stagecraft

Theory and application of current and traditional technical theatre practices. Training in stage carpentry, painting, and preproduction organization.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 168 - Theatre Production I

Application of technical-theatre practice in scenic construction, painting, lighting, sound, costuming, and stage management. Students will be assigned to work on experimental and major stage productions. May be repeated for credit.

Cr. 1.

Hours

Lab. 6.

Must take 4 semesters of this course, 4 credits total.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 213 - Voice for the Actor

Designed to heighten the actor's awareness of the vocal instrument. Elementary vocal techniques will be practiced to expand the student's vocal flexibility and range. Emphasis on freeing habitual vocal tensions and teaching the student the fundamentals of vocal health.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

THTR 351 - Costume Techniques I

A project approach to the basic practices used in the construction of the theatrical costume and its accessories.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 440 - Beginning Directing

A study of the theory of theatrical direction; script, beat, and character analysis. Rehearsal techniques and directorial approaches will be examined. Applied work in scene directing projects.

Preparation for Course

P: THTR 201 and 138.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

THTR 501 - Stage Management

A combination of lectures on and practical experiences in planning and conducting the rehearsal sequence leading to the running of a production.

Preparation for Course

P: junior standing.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

One of the following Design Courses: Credits: 3

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

Emphasis Area Credits: 18

Credits from emphasis area below

Elective Courses Credits: 31-49

- Sufficient elective credits to bring total to 124.

Total Credits: 124

Emphasis Areas

Acting (18 credits)

THTR 238 - Acting II

Emphasis is on developing a character within a truthful reality based on the given circumstances of the script. Students will be challenged through scene-work, monologue preparation, and script analysis that connect the actor's internal choices to the external needs of the character. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 138 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 323 - Acting: Movement for the Actor

Designed to heighten body awareness in movement and stillness. Characterization techniques will be practiced that expand the student's flexibility, agility, and range of self-expression. Emphasis on freeing habitual tension patterns through the exploration of expressive movement.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

Hours

Class 1, Lab. 3.

THTR 336 - Rehearsal and Performance II

The study and practice of rehearsal techniques and stage performance. Students will be assigned to acting and stage-management duties in major stage productions. May be repeated for credit.

Preparation for Course

P: THTR 136.

Cr. 1-2.

Hours

Lab. 3 or 6.

THTR 338 - Acting III

Professional acting studio. Advanced character development focusing on the demands of period styles work. Possible styles to be covered include Greek Theatre, Restoration/Comedy of Manners, Elizabethan, and Contemporary Realism. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 238, 213 or 323 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 413 - Advanced Voice for the Stage

Advanced work in vocal production for performance. Emphasis on development of the full resonant voice, vocal power and range, and standard American speech. Special attention paid to application of knowledge to various performance situations and environments.

Preparation for Course

P: THTR 213 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 438 - Acting IV

Professional acting studio. Professional issues class preparing the advanced acting student for the rigors of the professional and graduate-level theatre arenas. Students will explore the skills of monologue auditions, cold readings, improvisational auditions, and interviews, as well as headshot and resume development. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 338 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

Choose one of the following dance courses

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

Design and Technology (18 credits)

THTR 264 - Rendering Techniques

A project approach to the development of the student's ability to pictorially represent ideas through drawing, drafting, painting, etc. Emphasis on clarity of intention and effective presentation of ideas through various media and techniques.

Preparation for Course

P: theatre major.

Cr. 3.

THTR 365 - Period Style for the Theatre I

The study of developments in the history of dress, decor, and architecture from the primitive through the 17th century. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 366 - Period Style for the Theatre II

The study of developments in the history of dress, decor, and architecture from the 18th century through the present. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

Two of the following: Credits: 6

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

One of the following: Credits: 3

THTR 560 - Advanced Scenic Design

Advanced study of the principles of design and their application to specific staging problems.

Preparation for Course

P: THTR 360 or consent of instructor.

Cr. 3.

Hours

Class 1, Lab. 4.

Dual Level Course

Undergraduate-Graduate

THTR 561 - Advanced Costume Design

Advanced study of the principles of costume design and their application to specific problems.

Preparation for Course

P: THTR 361 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 3.

Dual Level Course

Undergraduate-Graduate

THTR 562 - Advanced Light Design

Advanced study of the principles of light design and their application to specific lighting problems.

Preparation for Course

P: THTR 362 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1 (with 2 hours experiential).

Dual Level Course

Undergraduate-Graduate

Directing (18 credits)**THTR 136 - Rehearsal and Performance I**

Study and practice of rehearsal techniques and stage performance. Students will be assigned to acting and stage management duties in stage productions. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-2.

Hours

Lab. 3 or 6.

THTR 238 - Acting II

Emphasis is on developing a character within a truthful reality based on the given circumstances of the script. Students will be challenged through scene-work, monologue preparation, and script analysis that connect the actor's internal choices to the external needs of the character. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 138 or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 323 - Acting: Movement for the Actor

Designed to heighten body awareness in movement and stillness. Characterization techniques will be practiced that expand the student's flexibility, agility, and range of self-expression. Emphasis on freeing habitual tension patterns through the exploration of expressive movement.

Preparation for Course

P: THTR 134, theatre major or consent of instructor.

Cr. 2.

Hours

Class 1, Lab. 3.

THTR 365 - Period Style for the Theatre I

The study of developments in the history of dress, decor, and architecture from the primitive through the 17th century. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 366 - Period Style for the Theatre II

The study of developments in the history of dress, decor, and architecture from the 18th century through the present. Emphasis on interpretation of said developments in contemporary theatre practice.

Preparation for Course

P: HIST H113 or HIST H114.

Cr. 3.

THTR 540 - Advanced Directing

Application of principles of directing to the various types of drama; laboratory practice in directing plays for experimental production.

Preparation for Course

P: THTR 440.

Cr. 3.

Hours

Class 2, Lab. 2.

Dual Level Course

Undergraduate-Graduate

Choose one of the following design courses:

THTR 360 must be taken here if not taken in the Theatre B.A. Core

THTR 360 - Scenic Design

A study of the application of scenographic theory to the art of scenic design. Emphasis on the development of unified production theory as specifically applied to the physical theatrical environment.

Preparation for Course

P: THTR 261 or consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 361 - Costume Design

Theory and principles of design specifically applied to stage costume design. Emphasis on the interrelationship of all aspects of production and how the costume becomes a building block toward total picturization.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

THTR 362 - Light Design

A study of the application of scenographic theory to the art and practice of light design. Emphasis on the development of unified production theory and the technical support of that theory.

Preparation for Course

P: THTR 261.

Cr. 3.

Hours

Class 2, Lab. 2.

Visual Communication and Design

Program: B.F.A.**Department of Visual Communication and Design****College of Visual and Performing Arts**

Visual Arts Building 213 ~ 260-481-6709 ~ www.ipfw.edu/vpa/vcd

The student learning outcomes for the degree are as follows:

- Visual Communication and Design provides an exceptional professional degree program which combines creative development in an artistic discipline with career preparation.
- Visual Communication and Design students demonstrate:
 - effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
 - visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
- Visual Communication and Design students demonstrate:
 - effective skills in written, oral, and multimedia communication while articulating their ideas in an appropriate media.
 - visual information literacy skills and quantitative reasoning as a means of gaining written and visual knowledge while drawing reliable conclusions in their chosen discipline.
 - critical thinking and problem solving while also evaluating their ideas and technological competencies.
 - artistic and scholarly collaboration with continuous personal growth to the highest levels of personal integrity and professional ethics.
 - knowledge and skills based upon an understanding of historical traditions that formed one's own and other cultures
 - a commitment to mutual respect through free and open visual inquiry and communications.

The Bachelor of Fine Arts program includes general education, art/design history, visual art, and design studio courses and offers concentrations in computer art and design, graphic design, and photography.

Students are eligible for admission to the B.F.A. major after (1) completing 45 credits of study with a grade of C or better and a cumulative G.P.A. of 2.5 overall or higher and 3.0 in all required VCD and FINA courses and (2) receiving approval for admission by the faculty after a portfolio review. A student may not enroll in any course numbered 300 or above until these criteria are met.

Admission

The student must meet the requirements of IPFW. Admission to the Department of Visual Communication and Design does not confer acceptance to the B.F.A. major. Newly admitted students are assigned to either a pre-B.F.A. or A.S. program. Later acceptance to the B.F.A. area of concentration is dependent upon satisfying the requirements of a portfolio review.

IPFW General Education Requirements Credits: 33

Area I—Linguistic and Numerical Foundations Credits: 9

See Part 2 General Education Requirements for approved courses

- Quantitative reasoning course Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis Credits: 3

See Part 2 General Education Requirements for approved courses

Art/Design History Credits: 12

- Credits in art/design history courses numbered 300 or above: 6

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Area of Concentration: Studio and Electives Credits: 75

Computer Art and Design

- Studio Electives in VCD or FINA Credits: 24

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

PHIL 275 - The Philosophy of Art

A survey of the principal theories concerning the nature, function, and value of the arts from classical times to the present.

Cr. 3.

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

VCD P243 - Photography Fundamentals

This course is designed to introduce the student to the basic understanding of photography in relationship to both the fine arts and the application of photography to advertising. Basic use of the camera and the darkroom will be introduced.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P356 - Package Design

Problems in package design from product concept to finished art work.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P357 - Display and Design

Problems in exhibition and display design including window, floor, and point of sale as well as sets for photography, film, and television production; other specialized structures such as architectural graphics and signage included.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P476 - Three-Dimensional Computer Modeling

Concentration on three-dimensional modeling and environments - object building and manipulation, lighting, atmosphere, and surface mapping. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P478 - Computer Animation

Concentration on three-dimensional computer animation concepts and methods, such as paths, cameras, objects in motion and transformation, animated textures, etc. Individual and collaborative animation problems will be examined. May be repeated up to 18 credits.

Preparation for Course

P: senior standing or permission of instructor.

Cr. 3.

Hours

Class 3, Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

Graphic Design

- Studio Electives in VCD or FINA Credits: 15

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P122 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

FINA P226 - Painting Fundamentals II

Watercolor painting class. Introduction to painting methods and media and the further application of the basic principles of composition through varied problems from still life, landscape, memory, and imagination.

Preparation for Course

P: FINA P122, P124, and P152.

Cr. 3.

VCD P253 - Principles of Graphic Design I

Familiarity with the visual vocabulary and the elements of the visual language. The expression of the elements of line, shape, texture, space, and color will be developed through a series of exercises. Different problems in building visuals provide training that artists need to make individual, yet clear, expressive statements.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P254 - Principles of Graphic Design II

Continuation of P253 with emphasis on more involved projects utilizing typography, layout, symbols, and illustration: Calendars, advertising campaigns, publications, typographical/illustrated books, and multicolor projects.

Preparation for Course

P: P253.

Cr. 3.

Hours

Studio 3,

VCD P261 - Layout and Finished Art

Assignments beginning with rough comprehensives, completion through finished art work, paste-ups, and art for reproduction.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

VCD P271 - Illustration I

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P272 - Illustration II

Advertising, story, fashion, and product; finished illustrations in various mediums and study of reproduction techniques.

Preparation for Course

P: P122, P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P356 - Package Design

Problems in package design from product concept to finished art work.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P357 - Display and Design

Problems in exhibition and display design including window, floor, and point of sale as well as sets for photography, film, and television production; other specialized structures such as architectural graphics and signage included.

Preparation for Course

P: P122, P152.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P371 - Illustration III

Advanced illustration projects tied into studio-type situations with emphasis on production problems.

Preparation for Course

P: P272.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P372 - Illustration IV

Advanced illustration projects tied into studio-type situations with emphasis on production problems.

Preparation for Course

P: P272.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P453 - Graphic Design III

An advanced course dealing with a singular multifaceted design campaign. This senior project will involve all phases of a promotional campaign from logotype development to final project.

Preparation for Course

P: P254.

Cr. 3.

Hours

Studio 3,

VCD P454 - Graphic Design IV

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interest of each student. Emphasizing portfolio preparation, the faculty advises the student in the development of an artist's statement and the design campaign for the senior review, culminating in the B.F.A. thesis exhibit. May be repeated up to 18 credits.

Preparation for Course

P: P374.

Cr. 3.

Hours

Studio 3, Class 3,

Dual Level Course

Eligible for graduate credit.

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

(or additional studio)

Photography

- Studio Electives in VCD or FINA Credits: 30

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P152 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

PHIL 275 - The Philosophy of Art

A survey of the principal theories concerning the nature, function, and value of the arts from classical times to the present.

Cr. 3.

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

VCD P273 - Computer Art and Design I

Emphasis will be placed on the exploration of digital art and design. This beginning course acquaints students with raster and vector graphics and the manipulation of peripherals such as scanners and printers. Students will be encouraged to explore personal imagery in solving assigned problems.

Preparation for Course

P: P151.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P343 - Advanced Photography I

Advanced problems in photography determined by the student's skill, interests, and major objectives.

Preparation for Course

P: P243.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P344 - Advanced Photography II

Advanced problems in photography determined by the student's skill, interests, and major objectives.

Preparation for Course

P: P243.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

VCD P374 - Computer Art and Design II

A continuation of P273. Emphasis will be placed on two-dimensional and three-dimensional graphic software, Web page design, and online publication.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

VCD P443 - Advanced Photography III

Individual problems in photography. May be repeated for up to 18 credits.

Preparation for Course

P: P344.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

Dual Level Course

Eligible for graduate credit.

VCD P444 - Advanced Photography IV

Individual problems in photography. May be repeated for up to 18 credits.

Preparation for Course

P: P344.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Dual Level Course

Eligible for graduate credit.

VCD P475 - Computer Art and Design III

Focus on advanced problems in computer graphics (interactive/multimedia authoring) will be determined by the skills and interests of each student. May be repeated up to 18 credits.

Preparation for Course

P: P273.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

VCD P495 - Independent Study in Fine Arts

This course provides the opportunity for a student to pursue studio interests (such as mixed media) not served in other course offerings. Projects may vary.

Preparation for Course

P: senior standing and permission of chair.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Notes

May be repeated.

Dual Level Course

Eligible for graduate credit.

(or additional studio)

Senior Project Credits: 6

Majors must complete a senior project in the elected area of concentration. This two-semester course requires of the student a project incorporating an in-depth study and exploration of an artistic endeavor. The senior project culminates in a B.F.A. thesis exhibition that is judged by the faculty and reviewed by the public. An artist's statement and project description is a requirement of the exhibition installation.

VCD P450 - Senior Project

Major thesis required of fourth-year students. Subject must be approved by department chairperson. A senior exhibit of a certain number of works in major area is also required prior to graduation.

Preparation for Course

P: senior standing in visual communication and design.

Cr. 3.

Hours

Studio 3,

Dual Level Course

Eligible for graduate credit.

Women's Studies (B.A.)

Program: B.A.**College of Arts and Sciences**

Classroom-Medical Building 35F ~ 260-481-6711 - www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- demonstrate understanding of feminist approaches to research and learning in at least two disciplines
- demonstrate understanding of major categories of feminist critical analysis, such as gender, race, and class
- demonstrate understanding of how traditional fields of study or artistic canons are expanded and reshaped when the contributions of women are taken into consideration
- demonstrate the ability to think critically about issues in feminism past and present

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

In addition to the B.A. program, an Associate of Arts with a concentration in women's studies is available at IPFW. See College of Arts and Sciences in Part 4 for further information.

To earn the Bachelor of Arts with a major in women's studies, you must satisfy the requirements of IPFW (see Part 8) and the College of Arts and Sciences (see Part 4), and complete the following courses. Only women's studies courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites.

IPFW General Education Requirements

Area I—Linguistic and Numerical Foundations

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W140 - Elementary Composition, Honors

Instruction in analysis of selected prose models and techniques of producing researched papers for a variety of rhetorical situations. Satisfies the two-semester composition sequence for most disciplines.

Preparation for Course

P: placement in W131 and honors eligibility.

Cr. 3.

One of the following: Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Area II—Natural and Physical Sciences Credits: 6

See Part 2 General Education Requirements for approved courses

Area III—The Individual, Culture, and Society Credits: 6

See Part 2 General Education Requirements for approved courses

Area IV—Humanistic Thought Credits: 6

See Part 2 General Education Requirements for approved courses

Area V—Creative and Artistic Expression Credits: 3

See Part 2 General Education Requirements for approved courses

Area VI—Inquiry and Analysis (not in WOST) Credits: 3

See Part 2 General Education Requirements for approved courses

College of Arts and Sciences Requirements

English Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

(or other approved writing course)

Foreign Language

- Requirements in Arts and Sciences Part B Credits: 14

Distribution (not in WOST or cross-listed courses)

- Requirements in Arts and Sciences Part C Credits: 9

Cultural Studies

- Additional credits in Western tradition Credits: 3

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.
(credits included in Major Requirements, below)

Core and Concentration (Major) Courses

- Credits in WOST or cross-listed humanities/visual arts Credits: 6
- Credits in WOST or cross-listed social science/science Credits: 6
- Additional credits in WOST or cross-listed courses Credits: 9

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

WOST W304 - Feminist Theories

Overview, in historical context, of feminist texts that analyze gender asymmetry in society; intersections of gender with other differences; and unequal distribution of power. In-dept study of key debates in Western feminism; selected readings by influential non-Western feminists. Required for WOST major.

Preparation for Course

P: WOST W210 and W233 or equivalent, or instructor permission.

Cr. 3.

WOST W400 - Topics in Women's Studies

An interdisciplinary approach to selected ideas, trends, and problems in women's studies. The capstone course focuses on issues and controversies in the new scholarship on women. Specific topics announced in Schedule of Classes

Preparation for Course

P: junior or senior standing, 12 credits of women's studies course work or permission of instructor.

Cr. 3.

Variable Title

(V.T.)

General Elective Courses

- Sufficient additional credits to bring the total to 124.

Total Credits: 124

Notes

A thematic focus of at least three courses (9 of the 30 credits in Major Requirements) must be selected in consultation with your women's studies advisor. The thematic focus provides coherence within this interdisciplinary major and can be defined in several ways: geographically (e.g., women in America, women in Western Europe); chronologically (e.g.,

women in antiquity, women of the Renaissance); by a category or issue (e.g., women and peace, women of color), and so on.

If you major in women's studies, you are also required to have a second major or one or more minors in other arts and sciences disciplines. If you elect to double-major in women's studies and another arts and sciences discipline, women's studies may be either your first or second major.

You may count the courses taken to fulfill this major toward arts and sciences distribution requirements wherever possible. However, no more than two courses may be applied to both majors.

If you elect to combine a women's studies major with one or more minors in other arts and sciences disciplines, you may count only two courses toward both the women's studies major and School of Arts and Sciences distribution requirements. Only one course may be counted toward both the women's studies major and any other minor.

Certificate

Accounting Post-Baccalaureate Certificate

Program: Certificate

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The Post-Baccalaureate Certificate in Accounting (P.B.A.) is offered by the Department of Accounting and Finance. Typically, students who pursue the P.B.A. are seeking an academic program of recognized quality that will help them prepare for careers in accounting. In combination with a bachelor's degree earned at an appropriately accredited institution, the P.B.A. meets the current minimum accounting educational requirements to sit for the Uniform Certified Public Accounting Examination in Indiana if students select the correct electives. Additional nonaccounting business credits may be required.

Admission Admission to the P.B.A. program is limited to holders of bachelor's degrees awarded by institutions that were accredited at the baccalaureate level by the North Central Association of Colleges and Schools (or comparable regional association) at the time the degree was granted.

To enroll in the program, you must first be formally admitted to IPFW. You must provide the IPFW admissions office with official transcripts documenting completion of your bachelor's degree.

Certificate Requirements Individuals interested in the P.B.A. program should check with either the department (Neff 350) or the school's Student Success Center (Neff 366) for specific program requirements and further information.

Special Academic Regulations for P.B.A. Students

Performance Standards With the exception of the minimum GPA for retention, P.B.A. students are held to the performance standards specified for students in undergraduate business programs. See Business later in this part of the Bulletin.

Course Waivers You may be eligible for waivers of course requirements based upon academic courses taken as part of your bachelor's program if those courses were completed within the past five calendar years.

Advanced Manufacturing Management Certificate

Program: Certificate

Department of Manufacturing & Construction Engineering Technology and Interior Design

College of Engineering Technology, and Computer Science

Engineering, Technology, and Computer Science Building 221 ~ 260-481-4127 ~ www.ecet.ipfw.edu

This 18-hour credit certificate provides state-of-the-art training for working professionals who seek knowledge for career advancement in management and ownership roles in various manufacturing sectors - biomedical, military, automotive, electronics, construction, sports, and more.

To earn the certificate in advanced manufacturing management, you must satisfy the requirements of IPFW (), fulfill all course prerequisites, and satisfactorily complete the following courses with a grade of C or better, see Part 8

Program Requirements

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

IET 224 - Production Planning and Control

A survey of production inventory control procedures including material requirements planning, just-in-time methods, and project management.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3,

IET 267 - Work Methods Design

An introduction to workplace design and work measurement, including time and motion study, ergonomics, and process standardization.

Preparation for Course

P: 105.

Cr. 3.

Hours

Class 3,

IET 350 - Engineering Economy

Analysis of the time value of money as applied to the manufacturing and construction environment. It also covers principles of product and project costing.

Preparation for Course

P: MA 159.

Cr. 3.

Hours

Class 3.

IET 478 - Lean Manufacturing and Design

This course covers theory and practical aspects of lean manufacturing concepts. Students will be able to apply the basic lean concepts of 5S, waste elimination, inventory and setup reduction, visual management, standardized work, error proofing, lean layout design, value stream mapping, pull system, and lean measurables. The course includes required project work to be done in teams.

Preparation for Course

P: IET 224.

Cr. 3.

Advanced Microprocessors Certificate

Program: Certificate

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

Students earning the certificate will have

- The fundamental knowledge, skills, and techniques necessary to program and interface microcontrollers and microprocessors.
- The knowledge and ability to learn and interface other languages or microprocessor-based devices.

The certificate program in advanced microprocessors provides the theoretical and practical knowledge necessary to enable you to use microprocessors in industrial applications. Some highlights of the course sequence include electronic simulations and calculations; theoretical and laboratory applications of digital logic circuits, operational amplifiers, D/A and A/D converters, computer memory circuits; microprocessor assembly language, Visual Basic, and "C" programming; EEPROM and EPROM programming; microprocessors and microcontrollers; experimental applications; and applied, practical projects. Special emphasis is placed on embedded systems using microcontrollers.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in computer-controlled systems, electronic communications, and computer networking.

To earn the certificate in advanced microprocessors, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses. This certificate is not available to any student with a major in EET (A.S. and/or B.S.) or CPET (B.S.).

Program Requirements

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

One of the following:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

ECET 114 - Introduction to Microcomputers

Programming in BASIC with emphasis upon electrical circuit problems. Includes pokes, peeks, string manipulation, arrays, sequential file creation and manipulation, sorts, searches, graphics, external files, and compiling.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

Advanced Microprocessors Project

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government

agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 19

American Studies Certificate

Program: Certificate in American Studies

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

The student learning outcomes for the degree are as follows:

- Students will examine American culture from a range of local, regional, and global perspectives.
- Students will develop skills in interdisciplinary, holistic, connected critical thinking, making connections between different fields of academic inquiry, and producing sustained, reasoned, critical analysis of American culture, society, and history.
- Students will develop critical self-awareness of how they as individuals have been shaped by their particular American experience as well as a broader understanding of the diverse cultures of the United States and the influential factors of gender, race, ethnicity, and religious background.
- Students will be able to put theory into practice through service-learning initiatives at local, arts, government, charitable and other appropriate organizations.
- American Studies is also committed to enriching the life of the campus and community through sponsoring speakers, films, visiting artist, and so on, fostering connections between the campus and community organizations, and facilitating research collaborations between Americanist faculty from different disciplines at IPFW.

The mission of the American Studies program is to produce engaged and thoughtful citizens who are aware of how they have been shaped by the American experience and how they can be responsible citizens both in a multicultural United States and in a global environment. Students in American Studies will analyze the place of America within the larger scope within its borders by the contributions of a variety of national and ethnic group, and by analysis of how America relates to and is perceived by countries outside its own borders.

Program Requirements

Required introductory course

AMST A200 - Comparative American Identities

Examines the formation of legal, social, cultural, and economic identities within the United States and within U.S.-controlled territories. Who counts as "American"? To what ends have citizens and non-citizens assumed, claimed, or refused "American" identity? This course employs a comparative frame in considering elite and subordinated classes (and/or genders, races, ethnicities, sexualities); institutional and counter-cultural forms of self-definition; official

history and alternative acts of collective memory.

Cr. 3.

Structure of other credits

- At least 6 credits must be at least at 300 level
- At least 6 credits must be taken in two additional areas of study outside of major field
- See History Department for list of pre-approved classes

Capstone

Choose one of the following courses

AMST A440 - Senior Seminar in American Studies

Cr. 3.

AMST A441 - America in Global Perspective

This course examines domestic and foreign interpretations of America as a world citizen from a variety of disciplinary perspectives. The course is intended to make students more aware of global issues and of what it means to be a "global citizen," and more understanding of views of America from outside its borders. Credit not given for both AMST A441 and INTL I441.

Cr. 3.

Total Credits: 18

Civic Education and Public Advocacy

Program: Certificate

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

The student learning outcomes for the degree are as follows:

- The certificate links methods, theory, and skills-based training with active student learning and community-based projects.

To earn the Certificate in Civic Education and Public Advocacy you will be required to complete 19 credit hours with a grade of C or better in each course.

Program Requirements

POLS Y150 - Foundations of Community Advocacy

This course will prepare students to learn more than the basic structure of government. It will prepare students to learn the historical and philosophical foundations of our democracy and to question long-established ideas. It is designed to prepare a person to develop the skills necessary to be a community leader. (Credit not given for both Y150 and Y101.)

Cr. 1-3.

Credits: 1

Introduction To Government and Politics Credits: 3

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y306 - State Politics in the United States

Comparative study of politics in the American states. Special emphasis on the impact of political culture, party systems, legislatures, and bureaucracies upon public policies.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y307 - Indiana State Government and Politics

Constitutional foundations, political development, organizational and functional process and growth, and current problems of Indiana government as a focal point for understanding role of states as instruments of social policy. Readings, case studies, problems.

Cr. 3.

POLS Y308 - Urban Politics

Political behavior in modern American communities; emphasizes the impact of municipal organization, city officials and bureaucracies, social and economic notables, political parties, interest groups, the general public, and protest organizations on urban policy outcomes.

Cr. 3.

Variable Title

(V.T.)

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

SPEA V264 - Urban Structure and Policy

An introduction to urban government and public policy issues. Topics include urban government structure and policy making, the economic foundations and development of cities, demography of cities and suburbs, land-use planning, and other selected urban policy problems.

Cr. 3.

Essential Communication Skills Credits: 3

COM 210 - Debating Public Issues

Study of argumentation as applied to public discourse. Lectures on logic and reasoning, library research methods and bibliography, identification and analysis of issues, construction and organization of cases, refutation and rebuttal, and the phrasing and delivery of the argumentative speech. Preparation of debate cases.

Preparation for Course

P: 114.

Cr. 3.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

POLS Y205 - Elements of Political Analysis

Introduction to the scope and methods of political science. Stresses the development of writing skills appropriate to the discipline.

Preparation for Course

P: ENG W131, or placement in ENG W140.

Cr. 3.

Session Indicators

(spring)

Notes

This course may be used to fulfill the Arts and Sciences writing requirement.

Promise and Problems of Democracy Credits: 6

(at least one political science course)

AFRO A210 - The Black Woman in America

A historical overview of the black woman's role in American society, including family, social, and political relationships.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

COM 316 - Controversy in American Society

Analysis of selected debates in major American controversies of social significance. Critical examination of the argument, personalities, and oral and written strategies employed in public debates on political, moral, and social issues.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

ENG L232 - Topics in Literature and Culture

Examination of a particular theme, such as the hero, death, or the city, and the techniques by which it is treated in various literary works, usually in more than one genre. May be repeated with different topics for a maximum of 6 credits.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Variable Title

(V.T.)

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L379 - American Ethnic and Minority Literature

A survey of representative authors and works of American ethnic and minority literature with primary focus on black, Hispanic, and Native Americans.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

HIST A306 - Sex Roles and Society in American History

What has it meant to be female or male in America? Examination of sex/gender roles, stereotypes, family life, sexual mores, work patterns, and popular culture. Reading in original sources and scholarly interpretations.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A313 - Origins of Modern America

Reconstruction, industrialism, immigration, urbanism, culture, foreign policy, progressivism, World War I.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A321 - History of American Thought I

Major themes in American intellectual history. 1607-1865: Puritanism, American Enlightenment, and the rise of democratic ideology.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A322 - History of American Thought II

Major themes in American intellectual history. 1865-1976: Social Darwinism, pragmatism, anti-intellectualism, 20th-century myths, and the new science.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A345 - American Diplomatic History I

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

PHIL 240 - Social and Political Philosophy

A study of some major social and political philosophers from Plato to contemporary authors. Issues such as justice, rights and freedom, community, and the "globalized" future will be considered.

Cr. 3.

POLS Y105 - Introduction to Political Theory

Perennial problems of political philosophy, including relationships between rulers and ruled, nature of authority, social conflict, character of political knowledge, and objectives of political action.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Credit not given for both Y105 and Y215. Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

POLS Y381 - History of Political Theory I

An exposition and critical analysis of the major political philosophers and philosophical schools. I. From Plato to Machiavelli. II. From Machiavelli to the present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y382 - History of Political Theory II

An exposition and critical analysis of the major political philosophers and philosophical schools. I. From Plato to Machiavelli. II. From Machiavelli to the present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y383 - American Political Ideas I

American political ideas from the colonial period to the founding period.

Cr. 3.

POLS Y384 - American Political Ideas II

American political ideas from the founding period to the present.

Cr. 3.

SOC S300 - Race and Ethnic Relations

Detailed examination of relations between and among racial and ethnic groups; sociological theories of prejudice and discrimination; comparative analysis of diverse systems of intergroup relations.

Preparation for Course

P: SOC S161; either SOC S260 or ENG W233 (or equivalent), or consent of instructor.

Cr. 3.

SOC S309 - The Community

Sociological definitions of community; theories of community and community organization; social, political, and economic factors that contribute to community organization and disorganization; alternative models of community development and planning.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S317 - Social Stratification

Nature, functioning, and maintenance of systems of social stratification in local communities and societies. Correlates and consequences of social class position and vertical mobility.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S338 - Sociology of Gender Roles

Exploration of the properties, correlates, and consequences of gender roles in contemporary societies. Emphasis on defining gender roles, tracing their historical development, considering their implications for work, marriage and fertility, with cross-cultural comparisons.

Preparation for Course

P: SOC S161 ; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Policy Formation and Analysis and Government Operations Credits: 3

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

(topic must be approved)

POLS Y301 - Political Parties and Interest Groups

Examination and evaluation of the behavior of political parties, voters, interest groups, and other institutions and procedures by which Americans try to control their government.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y303 - Formation of Public Policy in the United States

Processes and institutions involved in formation of public policy in a democratic society, with emphasis on American experience.

Preparation for Course

P: Y103 or consent of instructor.

Cr. 3.

POLS Y312 - Workshop in State and Local Government

Intensive study of administrative problems such as financial administration, public health, and welfare.

Preparation for Course

P: POLS Y103 or consent of instructor.

Cr. 3.

POLS Y317 - Voting, Elections, and Public Opinion

Determinants of voting behavior in elections. The nature of public opinion regarding major domestic and foreign policy issues; development of political ideology; other influences on the voting choices of individuals and the outcomes of elections; relationship among public opinion, elections, and the development of public policy. Credit not given for both Y316 and Y317.

Cr. 3.

POLS Y378 - Problems in Public Policy

Examines various substantive problems in the formulation and conceptualization of public policy. Both the policy and its impact are considered in the context of the entire political environment in which it operates. Examples are selected from various levels of government, not always confined to the United States. May be repeated once for credit.

Cr. 3.

Variable Title

(V.T.)

POLS Y394 - Public Policy Analysis

Place of theory and method in examining public policies in relation to programs, institutional arrangements, and constitutional problems. Particular reference to American political experience.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

(topic must be approved)

SPEA V365 - Urban Development and Planning

This course identifies the major problems associated with urban development in the United States and investigates the potential of public planning strategies and tools to deal with these problems. An emphasis is placed on the application of analytical approaches to problem definition and solution.

Preparation for Course

P: V264, K300.

Cr. 3.

SPEA V372 - Government Finance and Budgets

Study of fiscal management in public agencies, including revenue administration, debt management, and public budgeting.

Cr. 3.

Capstone Course Credits: 3

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

POLS Y482 - Practicum

Faculty-directed study of aspects of the political process based upon field experience. Directed readings, field research, research papers. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

Computer Networking Certificate

Program: Certificate

Department of Computer and Electrical Engineering Technology & Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

Students earning the certificate will have

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current computer networking software and equipment.
- The knowledge and ability to continue learning the principles and applications of future network operating systems and devices.

This certificate program in computer networking provides the theoretical and practical knowledge necessary to enable you to work with computer operating systems, data communication and network equipment, networking protocols, network system administration, local area networks, wide area networks, and network security.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in advanced microprocessors, computer-controlled systems, and electronic communications.

To earn the certificate in computer networking, you must fulfill all course prerequisites, and successfully complete the following courses with a grade of C or better in each course. This certificate is not available to any student with a major in CPET (B.S.).

Program Requirements

CPET 181 - Computer Operating Systems Basics

Introduction to computer operating systems, organization and functions of hardware components, and system software. Topics include system commands, operating system interface, system utilities, shells programming, file systems and management, introduction to concepts, graphical user interface, device drivers, memory management, processes, concurrency, scheduling, multitasking and multiprocessing. Laboratory experiences include Microsoft Windows and UNIX.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

CPET 281 - Local Area Networks and Management

A study of issues in local area network (LAN) planning, design, installation, and management. Topics include LAN components and protocols, topologies and network architecture, network system hardware consideration, LAN design and network layout, wiring and installation, network operating systems, network servers, connection and services for clients, network system administration and management. Other topics may include LAN applications, performance tuning, disaster recovery, hybrid networking environment and integration, network monitoring tools, and network management tools. Laboratory experiences include Microsoft Windows NT and UNIX.

Preparation for Course

P: CPET 181 or equivalent; C: 355 or CS 274.

Cr. 3.

CPET 364 - Networking Security

This course examines the analysis, design, implementation, and management issues surrounding effective network security. The business, conceptual, and technological aspects of network security for computer networks. Topics include virus protection, firewalls, authentication, encryption, wireless security, security protocols, and network security policy development and fraud protection.

Preparation for Course

P: CPET 281 or 355, or 384, or CS 374 or equivalent.

Cr. 3.

One of the following Credits: 3**CS 170 - C and Data Structures**

The course will introduce the C programming language including the language syntax, the programming environment, basic data types, complex data types (pointer, array, structures, bit fields, and unions), macros, i/o, and functions. Program development will emphasize modularization, data abstraction, and selection and analysis of algorithms. Other topics include recursion, files, linked lists, stacks, queues, and binary trees. Course projects are related to common engineering and computer science applications. Course will not count toward graduation in the computer science department.

Preparation for Course

P: 160 or ENGR 110.

Cr. 3.

ECET 264 - C Programming Language Applications

Examination of fundamental principles and issues in embedded applications: instrumentation, data acquisition, robots, and real-time systems. Overview of the C programming environment. Introduction to C language syntax, basic data types, complex data types (pointer, array, structure, bit fields, union, enum) storage classes, operators, preprocessor directives, macros, functions, flow control, and file I/O. Programming using a structured approach. Emphasis on use of mathematical functions (routines) libraries and numerical algorithms needed in embedded applications.

Preparation for Course

P: MA 154.

Cr. 3.

One of the following Credits: 4**CPET 355 - Data Communications and Networking**

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

(plus one-hour lab)

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

One of the following Credits: 3

CPET 384 - Wide Area Network Design

Credit by examination: none. This course explores wide area network (WAN) planning and design issues. Emphasis on WAN switching methods and technologies, protocols, and services, traffic engineering, and capacity planning design and tradeoffs. Representative case studies will be used. Other topics may include remote access technologies, access networks, backbone networks, enterprise WAN networks, remote monitoring tools and protocol analyzer, trends in WAN design and WAN integration.

Preparation for Course

P: CPET 281, CPET/ECET 355, CS 274 or equivalent.

Cr. 3.

CPET 493 - Wireless Networking

This course covers both theoretical issues related to wireless networking and practical systems for both wireless data networks and cellular wireless telecommunication systems. Students will also work on a project that addresses some recent issues in wireless and mobile networking.

Preparation for Course

P: CPET 355.

Cr. 3.

Hours

Class 2, Lab. 2.

CPET 495 - Web Engineering and Design

An introduction to problems involved in analyzing and designing Web applications from small-scale, short-lived services, to large-scale enterprise applications distributed across the Internet and corporate intranets and extranets. Major topics include Web standard protocols and interfaces, Web security, Web engineering methodology, Web architectures and Web components (Web server, application servers or environments, the client, and persistent server). E-commerce infrastructures, database and Web integration, Web services standards and technologies, and Web-based application development.

Preparation for Course

P: ECET 264, CS 161, and junior standing, or CPET 294.

Cr. 4.

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

CS 374 - Computer Networks

The design and implementation of data communications networks. Topics include network topologies; message, circuit and packet switching; broadcast, satellite and local area networks; routing; the OSI model with emphasis on the network, transport, and session layers.

Preparation for Course

P: CS 274.

Cr. 3.

Computer Networking Project

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 20

Computer-Controlled Systems Certificate

Program: Certificate

Department of Computer and Electrical Engineering Technology &

Information Systems and Technology

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The student learning outcomes for the certificate are as follows:

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current computer controlled devices.
- The knowledge and ability to continue learning the principles and applications of future computer controlled devices.

This certificate program provides theory and experiments on computer-controlled system design and implementation. Several methods of computer control including — programmable logic controllers (PLC) or Labview graphical programming, General Purpose Interface Bus control (GPIB, HPIB, or IEEE 488), and microcontroller-based systems — are studied. Highlights of the course sequence include data acquisition using low- and high-level languages, control-variable measurement using sensors, D/A and A/D conversions, ladder diagrams, design of pneumatic and hydraulic-controlled systems, sampling and reconstruction, and comparison of continuous and discrete time-controlled systems, and open- and closed-loop controlled systems.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor

in electronics, and minor in information systems and certificate programs in advanced microprocessors, electronic communications, and computer networking.

To earn the certificate in computer-controlled systems, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses with a grade of C or better. This certificate is not available to any student with a major in EET (A.S. and/or B.S.).

Program Requirements

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

One of the following Credits: 4

CPET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI model, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SDONET).

Preparation for Course

P: ECET 205 or CS 271 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2 or 3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 375 - Computer Controlled System Designs

A study of computer-controlled systems using microcontrollers, computer numerical control (CNC), and programmable logic controller (PLC). Topics include microcontroller-based control systems, pneumatic and hydraulic controlled systems, data acquisition, D/A and A/D conversions, ladder diagrams, sampling and reconstruction, Z transform, stability analysis techniques, continuous and discrete time-controlled systems, openloop and closed-loop controlled systems, CNC machines, and mechanical hardware.

Preparation for Course

P: ECET 114, ECET 111.

Cr. 3-4.

Hours

Class 3, Lab. 0-3.

One of the following Credits: 4

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 365 - Electrical Measurements

A study of instrumentation and automatic measurement. Individual instruments include DMM, counters, oscilloscopes, spectrum analyzers, and signal generators. The signals and operation of the general purpose interface bus are examined and applied to a measurements system.

Preparation for Course

P: ECET 152 or 207 and 205.

Cr. 4.

Hours

Class 3, Lab. 2.

Computer-Controlled Systems Project

CPET 499 - Computer Engineering Technology

Hours and subject matter to be arranged by staff. Repeatable up to 12 credits. An extensive individual design, special topics course, research, and/or analytical project in any one of the following areas: networking operating systems, computer networking, distributed computing, client/server applications, wireless communications, wide area network design, network system management, computer and network security. Internet system programming and industrial applications of networking, control, and monitoring. Collaboration with representatives of industry, government agencies, or community institutions is encouraged.

Preparation for Course

P: approved by instructor.

Cr. 1-4.

Total Credits: 17

Critical Care Nursing Certificate

Program: Certificate

Department of Nursing

College of Health and Human Services

Neff Hall B50 ~ 260-481-6816 ~ www.ipfw.edu/nursing

Career Steps

The Critical Care Nursing Certificate program is designed to provide advanced knowledge and skills in the specialty of critical nursing to registered nurses working in, or intending to work in, any acute care area of nursing; to licensed practical nurses with strong medical-surgical experience; and to student-nurses interested in learning about critical care nursing. Critical care nursing is a challenging and rewarding career. Credits earned for the Critical Care Nursing Certificate may be transferred into the Bachelor of Science with a major in nursing program at IPFW.

Admission Criteria

- Admission to the University

- Be a licensed R.N. or a student enrolled in second semester of medical/surgical nursing courses at IPFW/Parkview Department of Nursing may participate with permission of the program coordinator
- Complete Certificate Program application

The program coordinator is **Becky Salmon**, M.S., RNC, Associate Professor

To apply for the program on-line, fill out the Critical Nursing Program application form.

The primary objectives of this certificate are to provide:

- advanced knowledge and skills in the specialty of critical-care nursing to registered nurses and student nurses about to enter the workforce
- skills and knowledge in critical care to meet the growing challenge of providing care to increasingly sick patients within the managed-healthcare environment
- marketability of graduates with critical-care skills

To earn the certificate, you must:

- fulfill the requirements of IPFW (see Part 8)
- be a licensed RN. (Students enrolled in second-year nursing courses in the IPFW nursing program may participate with permission of the certificate program coordinator.)
- complete the following courses with a C or better:

Program Requirements

Nursing Core (13 credits)

NUR 245 - Basic Cardiac Dysrhythmias

This course is designed to educate the student in the theory and interpretation of cardiac monitor rhythms. Basic monitoring procedures and guidelines are taught. Emphasis is on the factors that determine whether a cardiac rhythm is normal or abnormal (dysrhythmia). Critical-thinking skills are utilized in identifying and prioritizing appropriate interventions related to the occurrence of dysrhythmias. This course is open to non-nursing students.

Preparation for Course

P: BIOL 203, 204.

Cr. 1.

NUR 311 - Intravenous Therapy

Intravenous Therapy is designed to prepare the associate degree nursing student to provide quality care to patients with infusion therapy. NUR 311 offers in-depth information on infusion therapy to complement learning in science and nursing courses in the nursing program. The student is able to experience infusion therapy during proctored laboratory and precepted clinical experiences.

Preparation for Course

P: 224 or 336.

Cr. 1.

NUR 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems.

Preparation for Course

P: BIOL 203, 204, CHM 104 or CHM 112.

Cr. 4.

NUR 345 - Trauma Nursing

NUR 345 provides a comprehensive overview of the trauma patient. Course content emphasizes the epidemiology of trauma, mechanisms of injury, anatomy and physiology of systems as they relate to trauma, and the assessment and management of injuries. This course is designed to enhance the practitioner's knowledge, refine skills, and build a firm foundation of trauma nursing.

Preparation for Course

P: NUR 224 or 336.

Cr. 1.

Hours

Class 1,

NUR 359 - Disaster Healthcare

Introduction to disaster preparedness and the predictors of the types of injuries and illnesses related to various disasters. Presents information on biological, chemical, and radiological weapons, bioterrorism, environmental disasters, mental health and traumatic events, and homeland security. Discusses the roles of healthcare workers in a hospital, medical facility, and community agency at the time of a disaster and the recovery period. Prepares healthcare workers to respond to a disaster by discussing community hazards and vulnerabilities. Course is based on the altered standards of care in mass casualty events development by the Agency for Healthcare Research and Quality (AHRQ) and the Office of the Assistant Secretary for Public Health Emergency Preparedness, U.S. Department of Health and Human Services (HHS).

Preparation for Course

P: NUR 116 or 202.

Cr. 1.

NUR 419 - Advanced Acute Care Nursing

This course prepares the student for complex patient care utilizing advanced nursing concepts and theories. Evidence-based and theory-based practice is emphasized. Clinicals provide opportunities to deliver and/or supervise care in healthcare settings and community agencies. Aspects of community/public health and leadership are integrated in senior clinical courses. Must be taken in last semester prior to graduation. Only RN completion students may select variable credit for one of the three 400- level clinical nursing courses (NUR 418, NUR 419, NUR 442). The 3-credit variable option includes lecture hours and no clinical hours.

Preparation for Course

P: NUR 418, 442.

Cr. 5.

Hours

Class 3, Lab. 6.

Supporting Courses (3 credits)

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

Approved Electives (3 credits)

(Credits in a course from nursing, SPEA, or the social sciences that better meets your goals may be substituted with the permission of the program coordinator)

One of the following Credits: 3

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

NUR 309 - Transcultural Healthcare

Transcultural Healthcare focuses on diverse cultural perspectives in health and illness. Culturally competent care that is humanistic, holistic, and respectful of diverse values, beliefs, and practices is examined. Similarities and differences that influence health promotion, maintenance, and restoration across the lifespan are reviewed on select cultural and religious groups.

Cr. 3.

NUR 319 - Alternative and Complementary Therapies

This survey course examines the principles, practices, and outcomes of select alternative healing and complementary therapies. The influences of diverse cultural groups, from both the West and East, are examined in relationship to healing practices. Students will apply evidence-based criteria, including research findings from the National Institutes of Health (NIH)- National Center for Complementary and Alternative Medicine, to evaluate the risks and benefits of selected modalities.

Cr. 3.

NUR 399 - Special Topics

Hours, credit, and subject matter to be arranged by staff. Repeatable up to 9 credits.

Cr. 1-6.

Hours

Class 0-4, Lab. 0-6,

Variable Title

(V.T.)

Gerontological Nursing Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

Total Credits: 19

Dental Assisting Certificate

Program: Certificate in Dental Assisting

Department of Dental Education

College of Health and Human Services

Neff Hall Room 150 ~ 260-481-6837 ~ www.ipfw.edu/dental

The student learning outcomes for the certificate are as follows:

- Demonstrate the breadth and depth of knowledge in basic sciences, social sciences, and clinical practice to deliver comprehensive care to patients in the practice of dentistry.
- Demonstrate and incorporate problem-solving skills in critical thinking, interpretation, reasoning, questioning, and decision-making.
- Demonstrate competence in assessing, evaluating, planning, and treating oral conditions and diseases.
- Demonstrate effective written, oral, and multimedia skills to communicate effectively in diverse settings.
- Interpret, evaluate, and synthesize current scientific dental research and apply evidence-based reasoning skills.
- Comprehend and demonstrate current technology in the practice of dentistry, as it is constantly changing.
- Demonstrate the highest levels of ethical behavior, personal integrity, and professional ethics in the practice of dentistry and the patients that are under their care.
- Assume a leadership and collaborative role in the advancement of the dental profession through local, regional, national, and international communities and professional organizations.
- Demonstrate and apply the skills for life-long learning and professional development.

This program includes at least one semester of prerequisite courses and one year of dental assisting courses. The program offers a full-time curriculum that is accredited by the Commission on Dental Accreditation of the American Dental Association.

A Dental Assisting Certificate prepares you for a career as a dental health professional who may choose to specialize in any of the following areas of dentistry: chairside general dentistry, expanded functions dental assisting (restorative) in general or pediatric dentistry, orthodontics, oral surgery, periodontics, assist in dental surgery at area hospitals, endodontics, public health dentistry, dental sales, dental insurance, dental research, business assisting or office management, or clinical supervision. The program combines didactic, laboratory, and clinical courses. Graduates are eligible to take the national boards to become a Certified Dental Assistant (CDA) and take the state boards to obtain a dental radiology license in the State of Indiana.

Admission

Admission to IPFW does not confer admission to this program. To be admitted to the certificate program you apply separately to IPFW and the dental assisting program. Two observations in dental offices are required. See the Department of Dental Education for application and observation forms. Prospective dental assisting students must complete IPFW prerequisite courses listed below or equivalent courses at another accredited college or university. These courses may not be graded on a pass/not-pass option. Remedial or developmental courses cannot be used to fulfill these prerequisite requirements. Because space in the dental assisting program is limited to 24 students per year, admission is competitive. Applications and two observations forms for selection into the dental assisting program must be received no later than March 1 of the year an applicant wishes to enter the program. The number of eligible applicants each year exceeds the number of spaces available.

Applicants must also make an appointment with a dental assisting advisor to discuss the program and receive current information regarding admission, prerequisite requirements, and possible degree completion options. To make an appointment with your advisor, log onto the dental education website <http://www.ipfw.edu/dental>, click on advisors and follow the instructions to find your academic advisor.

Class Selection Process

Requirements

- Have a minimum IPFW grade-point average (GPA) of 2.5 on a 4.0 scale in the 12 hours of pre-dental assisting curriculum. The GPA is calculated on only the 12 hours of pre-dental assisting curriculum taken at IPFW or at other Purdue University or Indiana University campuses. Applicants are ranked based on this GPA. This GPA does not include transfer courses.
- A minimum GPA does not guarantee admission. The actual GPA necessary for admission varies with the GPA distribution of the applicant pool and the number of available seats for admission.
- All transfer grades will be reviewed and evaluated in the admission process.
- First-priority consideration for program admission will be given to students who have completed all 12 hours of pre-dental assisting curriculum at IPFW or at other Purdue University or Indiana University campuses.
- Students must return the acceptance form by the deadline stated in the acceptance letter.
- Students who have not been accepted, but who are qualified, may reapply for admission.

University Preference

Students who complete all of their prerequisite courses at IPFW, Indiana University, or Purdue University will be considered first for entrance into the program.

Students who complete their prerequisite courses at IPFW, Indiana University, or Purdue University and other colleges/universities will be considered second for entrance into the program.

Students who complete all their prerequisite courses at other colleges/universities that are not IPFW, Indiana University, or Purdue University courses will be considered third for entrance into the program.

Prerequisite Courses

Prerequisite and preferred admission courses must be completed by May 18 for admission into the class that begins each fall. A minimum prerequisite GPA of 2.5 and a minimum cumulative GPA of 2.0 is required for all applicants. Required courses may be repeated only one time and the second grade will be the grade used to calculate prerequisite GPA. Repeated courses will not be averaged.

To apply for the Dental Assisting Certificate program, you must complete the following prerequisite courses by MAY 18 and receive a grade of C or better.

The pre-dental assisting curriculum is:

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Preferred Admission Courses

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

DAST A122 - Introduction to Dentistry

An overview of the specialties of dentistry with specific lectures on cavity classification and nomenclature. Instrument nomenclature, principles of cavity preparation, the space-maintenance concept, management of the child patient, use of the rubber dam in direct and indirect pulp therapy.

Cr. 1.

Total Credits: 12-21

Program Requirements

After acceptance into the program, you must fulfill the requirements of IPFW (see Part 8) and Dental Education, and satisfactorily complete the following courses with a grade of C or better:

DAST A111 - Oral Pathology, Physiology, and Anatomy

An overview study of the structure and function of the body starting with the basic tissues, organs, and organ systems followed by the mechanisms of disease with emphasis on oral pathology.

Cr. 1-2.

DAST A112 - Dental and Medical Emergencies and Therapeutics

A course including recognition and clinical experience of systemic emergencies. Comprehensive study of the physiological, toxicological, and therapeutic effects of drugs on living organisms, with emphasis on their rational application in the treatment of disease. Content includes discussions of drugs that are widely prescribed by physicians and dentists.

Preparation for Course

P: DAST A111.

Cr. 2.

DAST A121 - Microbiology and Asepsis Technique

An overview of microbiological aspects of health and disease with emphasis on sterile procedures and disinfection techniques.

Cr. 1-2.

DAST A131 - Dental Materials I

The physical and chemical properties of dental materials affecting their usage and clinical behavior. Study includes selection, characteristics, manipulation, and care of materials used in dentistry. A131 must precede A132.

Cr. 3.

Hours

Class 2, Lab 2.

DAST A132 - Dental Materials II

The physical and chemical properties of dental materials affecting their usage and clinical behavior. Study includes selection, characteristics, manipulation, and care of materials used in dentistry. A131 must precede A132.

Cr. 3.

Hours

Class 2, Lab 2.

DAST A141 - Preventive Dentistry and Nutrition

Etiology of prevalent oral diseases and prevention, with particular emphasis on plaque, plaque control, and fluorides. The effects of major nutrients on the physiologic body processes; applied nutrition in dental caries and periodontal

disease. Clinical and laboratory experiences.

Cr. 2.

DAST A171 - Clinical Science I

A core course in dental nomenclature; historical developments in dentistry; role of assistant as member of the dental health team; dental specialties; charting the mouth; identification and utilization of instruments and equipment; principles of dental procedures and instrument transfer.

Cr. 4.

Hours

Class 2, Lab 4.

DAST A172 - Clinical Science II

Clinical chairside experience in extramural assignments with a seminar to provide opportunities for students to share experiences.

Preparation for Course

P: DAST A171.

Cr. 3-6.

Hours

Class 1, Clinical 18.

DAST A182 - Practice Management, Ethics, and Jurisprudence

Dental practice management in reception procedures, appointment control, and clinical and financial records; purchasing and inventory control. Study of the legal and ethical aspects of dentistry.

Cr. 2.

DHYG H214 - Oral Anatomy

A study of the morphology, structure, and function of deciduous and permanent teeth and surrounding tissues, also including osteology of maxilla and mandible, nerve and vascular supply of teeth, muscles of mastication, with reinforcing laboratory clinical application.

Cr. 3.

Variable Title

(V.T.)

DHYG H242 - Introduction to Dentistry - Specialties

An overview of the specialties of dentistry with specific lectures on cavity classification and nomenclature. Instrument nomenclature, principles of cavity preparation, the space-maintenance concept, management of the child patient, use of the rubber dam in direct and indirect pulp therapy.

Cr. 1.

DHYG H303 - Radiology (lecture and lab)

Principles associated with production of X-rays and manipulation of X-ray equipment.

Cr. 1-2.

Hours

Class 2, Lab 2.

DHYG H305 - Radiology Clinic I

Clinical application of intra-oral and extra-oral radiographs.

Cr. 1-2.

Hours

Class 1, Clinical 3.

Total Credits: 35

Electronic Communications Certificate

Program: Certificate

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering, Technology, and Computer Science

***Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~
www.ecet.ipfw.edu***

The student learning outcomes for the certificate are as follows:

- The fundamental knowledge, skills, and techniques necessary to understand and relate scientific principles to applications using current electronic communications devices.
- The knowledge and ability to continue learning the principles and applications of future communications devices .

This certificate program provides theory and experiments for electronic communications topics ranging from low-frequency applications to fiber optics. It includes courses in analog communications (AM and FM), digital communications (satellite communications and digital TV), microwaves (high-frequency communications), and fiber optics. Computer programs such as SPICE, ACOLADE (digital communications), SYSCAD (analog communications), TOUCHSTONE (RF and microwave systems), and Microwave Office are incorporated into the curriculum.

The CEIT department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in electronics, and minor in information systems and certificate programs in advanced microprocessors, computer-controlled systems, and computer networking.

To earn the certificate in electronic communications, you must satisfy the requirements of IPFW (see Part 8), fulfill all course prerequisites, and satisfactorily complete the following courses. This certificate is not available to any student with a major in EET (A.S. and/or B.S.).

Program Requirements

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 377 - Introduction to Fiber Optics

An introductory course in fiber optics for junior- or senior-level students. Topics include optical characteristics, optical fibers, cables, modulation techniques, optical receivers and transmitters, and measurements on optical systems. A lab is also included in the course resulting in a complete optical transmitter/receiver system modulated with various methods.

Preparation for Course

P: ECET 303, 403; MA 228.

Cr. 4.

ECET 403 - Communications II

A study of digital communications that includes sideband systems, phase-locked loops, digital communications concepts, pulse and digital modulation, data communications, digital radio, space communications, and fiber optics. PSPICE, Acolade, and electronic workbench are incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

And one of the following (4 Credit Hours)

ECET 414 - Wireless Communications

Practical and theoretical aspects of wireless communication system design are studied; particular emphasis is on mobile communications. Frequency reuse, handoff, cell splitting, indoor/outdoor propagation, cochannel interference, frequency management, channel assignment techniques, cell-site antennas, handset antenna/human body interaction, switching and traffic, AMPS, GSM, TDMA, and CDMA are studied.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 473 - Microwaves

A study of microwave techniques that includes definitions, microwave materials, microwave components, transmission lines, the Smith chart, S-parameters, microwave diodes and transistors, and microwave measurements. Microwave Office is incorporated in the course.

Preparation for Course

P: ECET 303.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Electronic Communications Project

ECET 499 - Electrical Engineering Technology

Hours and subject matter to be arranged by staff.

Cr. 1-9.

Hours

Class 0-4, Lab. 3-9.

Variable Title

(V.T.)

Notes

Repeatable up to 9 credits

Total Credits: 17

Ethnic and Cultural Studies Certificate

Program: Certificate in Ethnic and Cultural Studies

College of Arts and Sciences

Classroom-Medical Building 154 ~ 260-481-6746 ~ www.ipfw.edu/engl

The student learning outcomes for the degree are as follows:

- The holder of this certificate will be able to demonstrate understanding of the religious and cultural institutions specific to Native American and/or African American society.

This certificate is available to all IPFW students interested in understanding the institutions, histories, and cultures of American ethnic groups.

To earn the certificate, you must (1) complete all requirements for a bachelor's degree, and (2) complete, with the approval of the program's advisory committee, 18 additional credits from the following list with a grade of C or higher in each course. No more than one independent-reading or internship course may be taken from the same department.

Credits in six of the following courses: 18

- EDUC E400 - Education in the Inner City
- EDUC E403 - Education in the Inner City Practicum
- MUS M395 - Contemporary Jazz and Soul Music

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ECON E360 - Public Finance: Survey

Study of the role and scope of government expenditures and taxation. Topics include public goods, externalities, income redistribution programs, and major elements of taxation.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F220 - Introduction to American Folklore

The folk cultures of the United States. The art and traditional philosophies of Indians, European-Americans, Afro-Americans, and occupational groups. The adaptation and interrelation of distinct American cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

HIST A349 - Afro-American History

A study of blacks in American history from earliest colonial days to the present. The lectures will consider such questions as the impact of slavery on the black person, the nature of racism in America, black social and cultural institutions, and changing patterns of civil rights protests.

Preparation for Course

P: sophomore class standing or consent of instructor.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST T425 - Topics in History

Intensive study and analysis of selected historical issues and problems of limited scope from the perspective of arts and humanities. Topics will vary but will ordinarily cut across fields, regions, and periods. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

PHIL 493 - Interdisciplinary Undergraduate Seminar

Subject matter will vary.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for credit.

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

SOC S300 - Race and Ethnic Relations

Detailed examination of relations between and among racial and ethnic groups; sociological theories of prejudice and discrimination; comparative analysis of diverse systems of intergroup relations.

Preparation for Course

P: SOC S161; either SOC S260 or ENG W233 (or equivalent), or consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

Total Credits: 18

Gerontology Certificate

Program: Certificate in Gerontology

College of Arts and Sciences

Classroom-Medical Building 135 ~ 260-481-5451 ~ www.ipfw.edu/gerontology/

The student learning outcomes for the degree are as follows:

- Students will demonstrate knowledge of gerontology including but not limited to biological, social, and psychological issues that impact on older adults and those who work with and care for them.
- Students will demonstrate knowledge of the basic study of aging in several disciplines, complementary areas such as nutrition and medical ethics, and applications dealing with health and social issues involving older adults.
- Students will demonstrate the ability to apply gerontological knowledge, through a practicum experience in which the student works with, or on behalf of, older adults in a campus, community, or agency setting that serves this population.

A certificate in gerontology is available to all IPFW students earning undergraduate degrees. It is also available as a stand-alone program. The multidisciplinary program provides basic academic courses on aging, as well as applied courses on health and social issues involving older adults. A practicum component involves applied work in a setting

serving older individuals.

The Gerontology Certificate is comprised of 18 credits. The required introductory course (3 credits) provides a foundation in biological, psychological, social, and applied aspects of aging. An additional 12 credits are chosen by the student from a variety of disciplinary courses relevant to gerontology. The final 3-credit requirement is a practicum that involves applied work in a setting serving older individuals.

To earn the certificate, you must:

- meet all regular IPFW admission requirements (refer to Part 8 of the undergraduate Bulletin); and
- complete the following 18 credits with a grade of C or better in each course.

To be entered into the program, you must meet with the gerontology program director. The program of study must be approved by the gerontology program director. All prerequisites must be satisfied before enrolling in any of the courses listed below.

Program Requirements

GERN G231 - Introduction to Gerontology

This course is a survey of the field of gerontology, including basic theoretical, methodological, and factual content drawn from a variety of disciplinary perspectives. Background material on the demographic, health, physiological, psychological, and social aspects of aging is provided. Structured opportunities for practical field observation and experience with the aged are included.

Cr. 3.

Credits from the following Credits: 12

(you may substitute independent or directed study in gerontology or aging in a suitable department as approved by the gerontology program director):

ANTH E421 - The Anthropology of Aging

This course explores age and the aging process cross-culturally by looking at the specific cultural context in which individuals age and by analyzing similarities and differences across cultures.

Cr. 3.

AUS 430 - Speech-Language Disorders in Healthcare Settings

Presents speech-language disorders across the lifespan encountered in a variety of healthcare settings. Discusses the etiology, evaluation, and management of these disorders. Addresses administrative structures, team approaches, and reimbursement issues in healthcare settings.

Preparation for Course

P: 5 semester credits in speech pathology or consent of instructor.

Cr. 3

BIOL 327 - Biology of Aging

This course presents a basic understanding of how the human body ages from the biological standpoint. The student will gain an understanding of biological and physiological changes associated with aging in various organ systems. Discussions of potential intervention strategies and ways to extend the quality of life during aging will be presented. The course is primarily geared toward the student interested in obtaining a certificate in gerontology. Cannot be used as a group A or B elective for biology majors.

Cr. 3.

FNN 302 - Nutrition Education

Basic nutrition and its application to current trends and controversies. Emphases placed on teaching techniques and communicating sound nutritional concepts to the lay audience. For nonscience majors.

Cr. 3.

Or

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

GERN G399 - Independent Study in Gerontology

This course provides an opportunity for students to independently pursue a gerontological problem or issue. With guidance from an instructor, students identify a topic they would like to study in-depth. This course is especially appropriate for gerontological interests that span more than one discipline.

Preparation for Course

P: GERN G231 and consent of instructor.

Cr. 3

Variable Title

(V.T.)

GERN G499 - Topics in Gerontology

Specific topics announced each semester the course is offered. Examples of course content include legal and economic aspects of aging; health issues in aging; and business and marketing issues and older adults. May be repeated once for credit.

Preparation for Course

P: GERN G231.

Cr. 1-6.

Variable Title

(V.T.)

MUS L340 - Music Therapy in Healthcare Settings

Study of music therapy methods and materials commonly used in assessment and treatment of children, adults, and the elderly in healthcare settings, with emphasis on stress management, relaxation, rehabilitation, and pain management.

Preparation for Course

P: X296, X298, or permission of director of Gerontology Program or director of Music Therapy Program.

Cr. 3.

Session Indicators

(spring, even years)

MUS U410 - Creative Arts, Health, and Wellness

Overview of the use of creative arts and action-oriented experiences throughout the lifespan. Involves the study of creativity and applications designed to facilitate healthy living practices, wellness, and personal growth from a humanistic perspective. Students will create, design, and lead creative arts experiences by the semester's end. No artistic performances are required.

Preparation for Course

P: Sophomore standing and completion of one course in artistic expression or the equivalent.

Cr. 3.

Session Indicators

(fall, odd years)

NUR 399 - Special Topics

Hours, credit, and subject matter to be arranged by staff. Repeatable up to 9 credits.

Cr. 1-6.

Hours

Class 0-4, Lab. 0-6,

Variable Title

(V.T.)

Gerontological Nursing

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 371 - Death and Dying

A multidisciplinary, empirically-based consideration of emotions, behaviors, and cognitions related to death and the process of dying. Topics include cultural and historical differences in concepts of dying, grief, and bereavement; individual differences related to preparation, adjustment, and coping, as well as discussion of special topics (e.g., hospice care, physician-assisted suicide, media coverage of death and dying).

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

SOC S314 - Social Aspects of Health and Medicine

Group characteristics in the causation, amelioration, and prevention of mental and physical illness, and the social influences in medical education, medical practice, and hospital administration.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SOC S331 - Sociology of Aging

Social aspects of aging and older adulthood. Topics include myths about aging; the process of aging, sexual behavior, social relationships, family relationship, religious activities, and leisure of the elderly.

Preparation for Course

P: SOC S161; either ENG W233 or SOC 260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA H411 - Chronic and Long-Term Care Administration

Administering programs across the continuum of care including nursing homes, hospice, home health, and assisted living; Medicare and Medicaid financing; quality improvement; care management; and needs of special populations, particularly, vulnerable elders.

Cr. 3.

Practicum in a gerontological setting Credits: 3

approved by the gerontology program director. The setting must involve, or relate to, individuals 60 years of age or older. You may choose either a practicum or internship course offered by a department, or the gerontology program practicum course, GERN G494, if you are an interdisciplinary student or are pursuing only the Gerontology Certificate. Approved courses are indicated below. Note that some of these courses may be taken only by those majoring in the sponsoring discipline.

AUS 549 - Clinical Practice in Speech/Language Pathology I

The second in a series of practicum courses designed to provide instruction and practical experience in fundamental diagnostic and therapeutic approaches to speech and language disorders.

Preparation for Course

P: AUS 420, 449, 521 or equivalents, with a grade of B or better in each course. R: AUS 430 or equivalent and consent of instructor.

Cr. 1-8.

Hours

Class 1, Lab. 1-8.

Notes

May be repeated for credit.

Dual Level Course

Undergraduate-Graduate

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

GERN G494 - Gerontology Practicum

Field experience in a setting involving adults 60 years or older, according to the interests and objectives of each student. Work will be supervised by the instructor and setting personnel. Provides an opportunity to apply gerontological theory and findings in a practical context.

Preparation for Course

P: GERN G231 and consent of instructor.

Cr. 3.

HSRV 400 - Internship I

This course will provide experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of case management skills including intake, client assessment, and development and implementation of intervention plans. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 315, 320; P or C: 401.

Cr. 1-4.

HSRV 401 - Internship Seminar I

This course will focus on professionalism, ethical issues, and social welfare policy as applied with human service clients and agencies. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

C: HSRV 400.

Cr. 1.

HSRV 450 - Internship II

This course will provide advanced experiential learning related to human service agencies. Students will be assigned to a human service agency and work with an agency supervisor to apply knowledge of program evaluation, legal implications related to human service practice, and management issues related to directing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 451.

Cr. 2-4.

HSRV 451 - Internship Seminar II

This course will provide a forum for discussion of advanced theories and skills applicable to developing, assessing, and managing human service agencies. Topics will include program evaluation, legal implications related to human service practice, and management issues related to implementing human service programs. Course is limited to students admitted to the B.S. in human services program.

Preparation for Course

P: 400, 401; C: 450.

Cr. 1.

HTM 301 - Hospitality and Tourism Industry Practicum

Training and practical experience at the entry level, totaling at least 300 hours in an approved hospitality or tourism operation.

Preparation for Course

P: 6 credits in HTM or consent of program coordinator.

Cr. 1.

HTM 302 - Hospitality and Tourism Industry Internship

Supervised and structured industry practical experience. Requires signed learning agreement between student and employer prior to initiating internship; a minimum of 400 work hours for each credit hour. Maximum number of credit hours given for a summer experience is one. Maximum number of credits given in a semester experience is two.

Cr. 1-2.

MUS L353 - Music Therapy Practicum II

Students provide services to elderly/geriatric individuals or groups focusing on the development of treatment interventions and plans. Involves clinical hours and attendance at weekly seminar. Liability insurance required.

Preparation for Course

P: L254, X296, C298.

Cr. 1.

Session Indicators

(fall)

MUS L423 - Advanced Music Therapy Practicum

An advanced, intensive field work course where students provide two or three hours of clinical music therapy services in a community agency. May involve program planning, techniques development, and/or a research project. Development of a learning contract is required. Liability insurance required.

Preparation for Course

P: L340, L421, permission of music therapy director.

Cr. 1-3.

Session Indicators

(fall, spring)

MUS L424 - Music Therapy Internship

Acceptance to internship program required prior to registration. A six-month internship completed under the supervision of a professional and credentialed music therapist at an AMTA approved clinical site. Course must be completed within two years of the completion of all course work. Internship must be completed before conferring of the degree. Liability insurance required.

Preparation for Course

P: All degree-required course work must be successfully completed prior to registration.

Cr. 1-2.

Session Indicators

(fall, spring, summer)

NUR 490 - Nursing Practicum

Provides the student an opportunity to develop an individualized practicum experience in the specialty of geriatrics. Based on the student's goals, sites are selected through faculty and student collaboration. One credit hour requires 45 hours of clinical practicum.

Cr. 1-3.

PHIL 480 - Practicum in Applied Ethics

Students will be assigned a definite task relevant to their educational interests in applied ethics. Students may be placed in appropriate cooperating local social-service agencies, educational institutions, legal services offices, businesses, or medical facilities. Work will be supervised by the department and the agency. Research and written reports will be required.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

POLS Y398 - Internship in Urban Institutions

This course is designed to provide opportunities for students to observe or participate directly in the policymaking process of those urban institutions requesting the assistance of paraprofessionals. Research and written reports are required. Evaluations will be made by both the agency and the instructor. Open to sophomores, juniors, and seniors. Students working in city and county institutions may repeat the course.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

POLS Y482 - Practicum

Faculty-directed study of aspects of the political process based upon field experience. Directed readings, field research, research papers. May be repeated for credit.

Preparation for Course

P: consent of instructor.

Cr. 1-6.

Session Indicators

(fall, spring, summer)

PSY 480 - Field Experience in Psychology

Supervised volunteer field work experiences in a setting appropriate to students' interests and goals. Intended as an opportunity to integrate theory and practice. (May be repeated once for credit with permission of instructor.)

Preparation for Course

P: consent of instructor.

Cr. 3.

SOC S494 - Field Experience in Sociology

Faculty-directed study of aspects of sociology based on field experience in conjunction with directed readings and writing. Students are trained in using their sociology understanding and skills in working at diagnosing and developing research projects and/or social change interventions for social organizations in the community.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent). Class restricted to sociology majors with senior class standing.

Cr. 3.

SPEA V380 - Internship in Public Affairs

Open to interested students upon approval of the faculty. Students are placed with public agencies or governmental units for assignment to a defined task relevant to their educational interests in public affairs. Tasks may involve staff work or research. Full-time participants may earn up to 6 credits.

Preparation for Course

P: permission of instructor.

Cr. 1-6.

Variable Title

(V.T.)

Notes

May be repeated for credit. Course is graded S/U (satisfactory/unsatisfactory).

Total Credits: 18

International Studies Certificate

Program: Certificate in International Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6860 or 260-481-6836 ~ www.ipfw.edu/ilcs

The student learning outcomes for the degree are as follows:

- Demonstrate an appreciation of the histories and cultures of other nations and the various means used to promote and maintain normal relations among them.
- Understand the impact of individual decisions on the world and world events on the individual.
- Demonstrate the ability to think critically about major international issues.

A certificate in international studies is available to all IPFW students who are interested in developing greater understanding of the histories and cultures of other nations and in studying the various means used to promote and maintain normal relations among them. You must be at least a sophomore in good standing to apply to this program.

To earn this certificate, you must complete the following credits with a grade of C or higher in each course as part of your bachelor's degree program:

Program Requirements

INTL I200 - Introduction to International Studies: Emerging Global Visions

An interdisciplinary, team-taught course for students who wish to deepen their understanding of an increasingly interdependent world and broaden their perspective of a variety of international topics such as international politics and history, global environmental issues, international business and economics, and international cultural studies.

Preparation for Course

P: sophomore standing.

Cr. 3.

Choose from the following Credits: 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E340 - Introduction to Labor Economics

Examines theories of wage and employment determination. Analysis of the impact of unions and other institutional factors on these theories; labor market imperfections; labor mobility; impact of government policies on labor behavior.

Preparation for Course

P: ECON E201; introductory statistics; junior class standing.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ILCS I208 - International Cinema

In this course students will study international cinema in order to increase their critical thinking, analytical, and communicative ability through reading and writing about films made outside of the United States. It will focus on the international filmmakers that work consciously to express their own sense of national identity.

Cr. 3.

ILCS I330 - Cultural Crossroads: Comparative International Cultures

In this course students will study in depth a topic of international significance in order to increase their thinking, analytical ability, and cultural competence.

Cr. 3.

MUS Z105 - Traditions in World Music

A survey of non-Western music concentrating on traditional Asian, Middle Eastern, and African styles. Students will learn how to listen to and understand music based on cultural context and technical characteristics. No previous musical experience required.

Cr. 3.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

POLS Y374 - International Organization

Examines assumptions about the causes, functions, results, and structures of international (intergovernment) organizations. Theory is combined with case study of the United Nations particularly. The European Community and regional organization examples provide a basis for understanding an evolving phenomenon.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

SOC S308 - Introduction to Comparative Sociology

Social organization of modern societies. Distinctions and broad cross-cultural comparisons between Western and non-Western social systems. Methods of cross-cultural analysis.

Preparation for Course

P: SOC S161 and ENG W233 or SOC S260 (or equivalent), or consent of instructor.

Cr. 3.

Credits from the following in a non-Western area Credits: 6

ANTH E310 - Introduction to the Cultures of Africa

Explores the vitality and diversity of African cultures today in communities ranging from town neighborhoods to remote villages and from desert to rainforest. Demonstrates the tenacity and creativity of human societies facing severe political, social, and ecological pressures, but also contributes new questions and answers to global debates about family values, ethnicity, terrorism, hunger, and economic growth.

Cr. 3.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E455 - Anthropology of Religion

Critical evaluation of current approaches to the analysis of religious myth, ritual, and symbolism. Problems in understanding religious beliefs of other cultures. Modern development of the anthropology of religion.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

ANTH E479 - Indian Cultures of Peru

Detailed examination of past and present of one of the largest Indian populations in Latin America. Emphasis on the role of Indians in contemporary society.

Preparation for Course

P: consent of instructor.

Cr. 3.

ENG L113 - Introduction to African Literature

A study of African oral and written fiction, poetry, and drama. Designed to give students a basic knowledge of African literature and the issues surrounding it.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

HIST D410 - Russian Revolutions and the Soviet Regime

Russia on the eve of World War I; impact of World War I on Russian society; the revolutions of 1917; civil war and allied intervention in Russia; New Economic Policy and Five-Year Plans; the Stalin and Post-Stalinist eras.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST D426 - History of Balkans: 1914 to Present

First World War in the Balkans; politics, economies, and societies in the Balkan countries during the 20th century; Balkan unity movements; international events and World War II; rise of socialism in the region; era of cold war and detente; revolutions of '80s and '90s.

Cr. 3.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST E332 - African History from Colonial Rule to Independence

1750 to present. Slave trade, European imperialism; impact of Islam and Christianity, new state formations, reassertion of African culture and identity. Credit not given for both E332 and E432.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST F342 - Latin America: Evolution and Revolution

Hispanic America since independence, with emphasis on common problems of nation building in multi-racial former colonial societies; latifundia; dependency relationships; impact of industrialization; the conservative and revolutionary responses; 1810- present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F346 - Modern Mexico

Places contemporary Mexico in historical perspective, focusing on the 19th and 20th centuries. Topics include 19th century social and political movements, the causes and consequences of the 1910 revolution, the formation of Mexico's political system, problems of economic growth, and the changing patterns of gender, class, and ethnicity in Mexican society.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

HIST F432 - 20th Century Latin American Revolutions

Revolutions, revolutionary movements, rapid social change, and modernization from Battle through Menem. Particular attention to the Mexican, Cuban, Bolivian, Guatemalan, Costa Rican, and Nicaraguan revolutions, to the Peron, Vargas, and Velasco Alvarado administrations and Cold War confrontations.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F447 - U.S.-Latin American Relations

Diplomatic and economic relations of the United States with Latin America, from American independence to the present. Evolution of Monroe Doctrine, Mexican War, development of trade and investments, establishment and abandonment of protectorates, Good Neighbor Policy, increased hemispheric interaction in the World War II and Cold War eras.

Cr. 3.

Subject Area

[US] [OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST H202 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

HIST T335 - Topics in Non-Western History

Study and analysis of selected historical issues and problems in non-Western, Russian, and Latin American history from the perspective of the arts and humanities. Topics will vary. May be repeated for credit with different topics.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

POLS Y107 - Introduction to Comparative Politics

Examines countries around the world to investigate fundamental questions about politics. Topics include democratic development, promotion of economic prosperity, maintenance of security, and management of ethnic and religious conflict. Critical thinking skills encouraged. Cases for comparison include advanced industrialized democracies, communist and former communist countries, and developing countries. Credit not given for both Y107 and Y217.

Cr. 3.

POLS Y339 - Middle Eastern Politics

Political culture and change in selected Middle Eastern and North African countries. Topics include political elites, traditional cultures, modern political ideology, institutions of political control, conflict management, and social reform policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

POLS Y340 - East European Politics

Compares political change in the East European states, and emphasizes the legacies of authoritarianism and communism and the post-communist transition to democracy. Topics include the building of political institutions, the inclusion of citizens into the polity, the reform of the economy, the management of ethnic and social conflicts, and integration into the European Union. Eligible for graduate credit.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) Requirement.

Dual Level Course

Eligible for graduate credit.

REL 301 - Islam

Introduction to the "religious world" of Islam: the Arabian milieu before Muhammad's prophetic call, the career of the Prophet. Qur'an and hadith, ritual and the "pillars" of Muslim praxis, legal and theological traditions; mysticism and devotional piety, reform and revivalist movements.

Cr. 3

SOC S410 - Advanced Topics in Social Organization

An advanced course in social organizations, allowing for a more thorough coverage of selected topics, e.g. social stratification, formal organizations, urban social organization, education, religion, politics, demographics, social power, social conflict, social change, comparative social systems, race and ethnic relations, rural sociology, urban sociology, and work reorganization. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for use in fulfilling the Cultural Studies (Non-Western Culture) requirement only when the topic is Culture of China.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

Additional Credits: 6

(may be chosen from the list below and/or from the list of non-Western courses above)

ANTH A460 - Topics in Anthropology

Cr. 1-3.

Variable Title

(V.T.)

ANTH E402 - Gender in Cross-Cultural Perspective

This course considers the meaning and social implications of gender in human society. Cultural definitions of “male” and “female” gender categories as well as associated behavioral and structural differentiation of gender roles will be analyzed using current anthropological concepts and theories.

Cr. 3.

CMLT C340 - Women in World Literature

Study of creative women writers who deal with unconventional themes. Comparison of images of female characters in 20th-century novels by French, English, and American women writers who challenge literary or social conventions. Focus on fiction or on another genre (e.g., drama, poetry, essay) each time course is offered. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Variable Title

(V.T.)

FINA H390 - Topics in Art History

In-depth projects and studies in special directions of art history, closely related to existing areas of concentration. May be repeated.

Cr. 3.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F111 - Introduction to World Folk Music

Study of the interrelationship of music sound and behavior. Focus on music events in life and year cycles of selected cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150. Introduction to world traditional music.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F305 - Asian Folklore

Forms and functions of folklore, folklife, or folk music in the traditional and developing societies of Asia. Folklore as a reflection of culture. Relationship between folklore forms and belief systems in Asia. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

HIST A345 - American Diplomatic History I

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST A346 - American Diplomatic History II

American diplomacy from 1775 to 1823; diplomacy of American continental expansion to 1898. America as a world power. Involvement in Far Eastern affairs after 1898, diplomacy of World Wars I and II, developments to present. Credit not given for both A345 and A316.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST B361 - Europe in the 20th Century I

Diplomatic, economic, intellectual, military, political, and social developments within Europe from World War I to World War II.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[WE] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST B378 - History of Germany II

Impact of French Revolution and Treaty of Vienna (1815); struggle between reaction and liberalism; unification; industrialization; imperialism; international friction; internal political conflicts; World War I; Weimar Republic; Hitler regime; problems since 1945.

Cr. 3.

Variable Title

(V.T.)

Subject Area

[WE] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST H201 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

HIST H202 - Russian Civilization I-II

From earliest times to the present era. Political, economic, social, and cultural topics, as well as Russia's relations with other countries. Mongol conquest, Westernization, industrialization, Russian revolutions, and Stalin's purges: literature and art in historical context.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

Subject Area

[OW]

POLS Y335 - Western European Politics

Development, structure, and functioning of political systems in Western Europe. Political dynamics of European integration.

Cr. 3.

POLS Y350 - Politics of the European Union

Study of the politics of the European Union (EU). Assesses past and present dynamics of economic and political integration in Europe, the structure and work of European Union institutions, and EU public policies such as the Single Market, the common currency, common foreign and security policy, and trade.

Cr. 3.

POLS Y367 - International Law

Sources and consequences of international law; relationship to international organizations and world order; issues of national sovereignty, human rights, conflict resolution, international property rights, world trade, environmental change, and other topics.

Preparation for Course

P: Y109 or consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

POLS Y371 - Workshop in International Topics

Includes such topics as development of the international system, politics of food and populations, law of the sea, human rights, trade, U.S. foreign policy, United Nations issues, etc. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

POLS Y376 - International Political Economy

Theories about the interaction between the international economic and political systems are the subject of this course. Specific topics covered will include (among others) the politics of trade, aid, foreign investment, and international monetary affairs; theories of dependency and imperialism; the politics of international competition in specific industries; the stability/instability of international economic regimes.

Cr. 3.

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Total Credits: 18

Foreign Language Requirement

In addition to the 18 credits stipulated above, students must demonstrate basic proficiency in a language other than English. The proficiency may be demonstrated by placing at the third-semester level or higher on the foreign language placement test, or by completing the first two semesters of a foreign language at the college level. Students who speak a language other than English are exempt from this requirement.

Labor Studies Certificate

Division of Labor Studies

Program Offered: Certificate in Labor Studies

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

The student learning outcomes for the degree are not available for this degree, contact the program office.

To earn the certificate in labor studies, you must fulfill the requirements of IPFW (see Part 8) and successfully complete the following courses:

Program Requirements

- Credits in the Labor Studies Core: 15
- 3 credits in each Required Area of Learning Credits: 9
- Additional credits in one of the Required Areas of Learning Credits: 6

Credits from the Labor Studies Core Credits: 15

Credits from the following: 15

LSTU L100 - Survey of Unions and Collective Bargaining

A survey of labor unions in the United States, focusing on their organization and their representational, economic, and political activities. Includes coverage of historical development, labor law basics, and contemporary issues.

Cr. 3.

LSTU L101 - American Labor History

A survey of the origin and development of unions and the labor movement from colonial times to the present. The struggle of working people to achieve a measure of dignity and security will be examined from social, economic, and political perspectives.

Cr. 3.

LSTU L110 - Introduction to Labor Studies: Labor and Society

An introduction to the changing role of labor in society. The course will emphasize a comparative approach to issues confronting labor organizations.

Cr. 3.

LSTU L190 - The Labor Studies Degree

Required for all DLS majors. This course will provide an introduction to the labor studies degree and to the knowledge and skills needed by students to progress toward a degree in a reasonable time frame. Students will learn how to build a plan of study that takes advantage of both credit for prior learning and new learning opportunities.

Cr. 1.

LSTU L200 - Survey of Employment Law

Statutes and common law actions protecting income, working conditions, and rights of workers. Topics include workers' compensation, unemployment compensation, fair labor standards, Social Security, retirement income protection, privacy, and other rights.

Cr. 3.

LSTU L201 - Labor Law

A survey of the law governing labor-management relations. Topics include the legal framework of collective bargaining, problems in the administration and enforcement of agreements, protection of individual employee rights.

Cr. 3.

LSTU L203 - Labor and the Political System

Federal, state, and local governmental effects on workers, unions, and labor-management relations; political goals; influences on union choices of strategies and modes of political participation, past and present; relationships with community and other groups.

Cr. 3.

LSTU L205 - Contemporary Labor Problems

An examination of some of the major problems confronting society, workers, and the labor movement. Topics may include automation, unemployment, international trade and conglomerates, environmental problems, minority and women's rights, community relations, changing government policies.

Cr. 3.

LSTU L210 - Workplace Discrimination and Fair Employment

Examines policies and practices that contribute to workplace discrimination and those designed to eliminate discrimination. Explores effects of job discrimination and occupational segregation. Analyzes Title VII, ADA, and related topics in relation to broader strategies for addressing discrimination.

Cr. 3.

LSTU L220 - Grievance Representation

Union representation in the workplace. The use of grievance procedures to address problems and administer the collective bargaining agreement. Identification, research, presentation, and writing of grievance cases. Analysis of relevant labor law and the logic applied by arbitrators to grievance decisions.

Cr. 3.

LSTU L230 - Labor and the Economy

Analysis of the political economy of labor and the role of organized labor within it. Emphasis on the effects on workers, unions, and collective bargaining of unemployment investment policy, and changes in technology and corporate structure. Patterns of union political and bargaining response.

Cr. 3.

LSTU L240 - Occupational Health and Safety

Elements and issues of occupational health and safety. Emphasis on the union's role in the implementation of workplace health and safety programs, worker and union rights, hazard recognition techniques, and negotiated and statutory remedies, in particular the Occupational Safety and Health Act of 1970.

Cr. 3.

LSTU L250 - Collective Bargaining

The development and organization of collective bargaining in the United States. Union preparation for negotiations, bargaining patterns and practices, strategy and tactics; economic and legal considerations.

Cr. 3.

LSTU L251 - Collective Bargaining Laboratory

Designed to provide collective bargaining simulations and other participatory experiences in conjunction with L250.

Preparation for Course

P: or C: L250.

Cr. 1-3.

LSTU L255 - Unions in State and Local Government

Union organization and representation of state and municipal government employees, including patterns in union structure, collective bargaining, grievance representation, and applicable law.

Cr. 3.

LSTU L260 - Leadership and Representation

Organizational leadership issues for the union, community, and other advocate organizations. Analyzes leadership styles, membership recruitment, and leadership development. Examines the role of leaders in internal governance and external affairs including committee building, delegation, negotiations, and coalition building.

Cr. 3.

LSTU L270 - Union Government and Organization

An analysis of the growth, composition, structure, behavior, and governmental processes of U.S. labor organizations, from the local to national federation level. Consideration is given to the influence on unions of industrial and political environments, to organizational behavior in different types of unions, and to problems in union democracy.

Cr. 3.

LSTU L280 - Union Organizing

Explores various approaches and problems in private and public sector organizing. Traditional approaches are evaluated in light of structural changes in labor markets and workforce demographics. Topics range from targeting and assessments to committee building and leadership development.

Cr. 3.

Required Areas of Learning for Labor Studies

Arts and Humanities

- Afro-American Studies
- Classical Studies
- Communication
- Comparative Literature
- English (except R150 and W130)
- Folklore
- Foreign Language
- History
- Journalism
- Music
- Philosophy
- Theatre
- Visual Arts

Sciences and Mathematics

- Anthropology (B200 and E445 only)
- Astronomy
- Biology
- Chemistry (except 100)
- Computer Science (includes BUS K200, K211, K212, K213, K214, K215, K216)
- Economics (E270 only)
- Entomology
- Forestry and Natural Resources
- Geography (G107 and G304 only)
- Geology
- Horticulture
- Mathematics (except 101, 102, 103, 109, 111, and 113)
- Physics
- Psychology (120, 201, 314, 333, 329, and 416 only)
- Sociology (S351 only)
- SPEA (K300 only)
- Statistics

Social and Behavior Sciences

- Anthropology
- Economics
- Geography
- Linguistics
- Political Science
- Psychology
- Sociology
- SPEA (J101 only)
- WOST (W210 only)

3 credits in each Required Area of Learning Credits: 9

Additional credits in one of the Required Areas of Learning Credits: 6

Total Credits: 30

Native American Studies Certificate

Program: Certificate in Native American Studies
College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

The student learning outcomes for the degree are as follows:

- The holder of this certificate will have knowledge of the cultures, prehistory, and creative and artistic expression of Native Americans. He or she will be able to apply this knowledge in pursuit of social work or economic development work on behalf of Native American Organizations.

A certificate in Native American studies is available to all IPFW students. The program provides an appreciation of the cultures, prehistory, history, and creative and artistic expression of Native Americans for the benefit of those who may be interested in social work, economic development, and Native American organizations.

To earn the certificate, you must meet all regular IPFW admission requirements (see Part 8) and complete the following courses with a grade of C or higher in each course:

Program Requirements

Credits in ethnography of Native Americans chosen from the following:

Credits: 6

ANTH E320 - Indians of North America

An examination of the political, economic, ecological, religious, kinship, and warfare patterns of representative Native American groups before and at the time of European contact.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E321 - Peoples of Mexico

Surveys modern Indian groups, peasant societies, and problems of acculturation and urbanization in contemporary Mexico.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH E330 - Indians of South America

The cultural development and contemporary life of aboriginal societies in the tropical and marginal areas of the continent. Ethnic relationship and characteristics of major cultural groups are examined through detailed study of representative tribal units.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Sawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Credits in prehistory of Native Americans chosen from the following:

Credits: 3

ANTH E335 - Ancient Civilizations of Mesoamerica

The cultural development of the great pre-Columbian civilizations in Mexico and Guatemala, especially the Aztec, Toltec, Olmec, and Maya. Emphasis on the social life, cultural achievements, religion, world view, and political systems to illustrate the diversity and richness of Amerindian life before the Spanish conquest.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P360 - Archaeology of North America

Introduction to antiquity of the American Indian, principal culture areas, and field methods and techniques incident to recovery of archaeological data and materials.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

ANTH P370 - Ancient Cultures of South America

Evidence for successive migrations into the continent, the subsequent development of local cultures, and civilization in the central Andes.

Preparation for Course

P: ANTH P200 or consent of instructor.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Credits in history of Native Americans chosen from the following: Credits: 3

HIST A310 - Survey of American Indians I

The Native American experience from pre-Columbian period through American Civil War. Lectures and readings will focus upon Native American cultural patterns and the Native American response to French, British, and American Indian policies.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A311 - Survey of American Indians II

Native American-White relations from Civil War through 1980s. Focus on Native American attempts to defend their homelands in American West, establishment of Indian reservations in late 19th century. Impact of the Sawes and Wheeler-Howard Acts, emergence of Native American church, urbanization of Native Americans in 20th century.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western) requirement.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

HIST A318 - The American West

Western expansion and development 1763-1900: economic, political, and social. Special attention to natural resources, Native American-Anglo American relations, and the role of the West in American myth and symbol.

Cr. 3.

Subject Area

[US] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F341 - Latin America: Conquest and Empire

Geographical, Indian, Spanish, Portuguese, and African backgrounds; discovery and conquest; settlement and expansion; political, economic, social, cultural, and religious institutions; trans-European struggle for hemispheric

dominance; wars of independence; 1492-1825.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F342 - Latin America: Evolution and Revolution

Hispanic America since independence, with emphasis on common problems of nation building in multi-racial former colonial societies; latifundia; dependency relationships; impact of industrialization; the conservative and revolutionary responses; 1810- present.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

HIST F432 - 20th Century Latin American Revolutions

Revolutions, revolutionary movements, rapid social change, and modernization from Battle through Menem. Particular attention to the Mexican, Cuban, Bolivian, Guatemalan, Costa Rican, and Nicaraguan revolutions, to the Peron, Vargas, and Velasco Alvarado administrations and Cold War confrontations.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Subject Area

[OW] - [US] United States [WE] Western Europe [OW] Other World

Dual Level Course

Eligible for graduate credit.

Credits in Native American studies chosen from the following: Credits: 3

ENG L364 - Native American Literature

A survey of traditional and modern literature by American Indians, especially of the high plains and southwest culture areas, with particular attention to the image of the Indian in both native and white literature.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FOLK F352 - Native American Folklore

Comparative examination of various verbal, musical, and dance forms of Native American societies. Consideration of cultural systems of Native Americans within the context of general American culture. May be repeated once when topics vary.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Additional credits from the lists above or in an approved elective Credits: 3

Total Credits: 18

Peace and Conflict Studies Certificate

Program: Certificate in Peace and Conflict Studies

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6019

The student learning outcomes for the degree are as follows:

- Explain sources of conflict as rooted in inequality and injustice, including issues of race, ethnicity, color, gender, sexual orientation, class, age, disabilities, and/or religious affiliation.
- Explain the dynamics of conflict at various social levels, including interpersonal, group, organization, community, society, and/or global.
- Explain varying perspectives on peace and differing paths to achieve it.
- Synthesize a critique of violent techniques of conflict resolution such as war and oppression.
- Demonstrate commitment to social justice and nonviolent conflict resolution.

- Demonstrate skills in employing nonviolent conflict resolution strategies and promoting social change.

A certificate in peace and conflict studies is available to all IPFW students who wish to understand the dynamics of conflict as well as various paths toward peace, from the interpersonal to the global level. To earn this certificate, you must complete the following 15 credits with a grade of C or higher in each course:

Program Requirements

One of the following: Credits: 3

PACS P200 - Introduction to Peace and Conflict Studies - Humanities Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a humanities focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

PACS P201 - Introduction to Peace and Conflict Studies - Social/Behavioral Sciences Perspectives

An initial survey of major themes, approaches, and issues of peace and conflict, including violence and nonviolence, war and peace, social oppression and justice, conflict and conflict resolution. Texts and approach are interdisciplinary, with a social/behavioral sciences focus. Either PACS P200 or P201 is required for Peace and Conflict Studies Certificate.

Cr. 3.

Credits in a social and behavioral sciences courses Credits: 3

Chosen from a list available in the School of Arts and Sciences office.

Credits in a humanities course Credits: 3

Chosen from a list available in the School of Arts and Sciences office.

Credits in another course Credits: 3

Chosen from either the humanities course list or the social and behavioral sciences course list.

One of the following senior-project courses: Credits: 3

PACS P497 - Humanities Readings and Research in Peace and Conflict Studies

Readings and research with a humanities focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

PACS P498 - Social and Behavioral Sciences Readings and Research in Peace and Conflict Studies

Readings and research with a social and behavioral sciences focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

PACS P499 - Social and Behavioral Sciences Internship in Peace and Conflict Studies

Internship in an organization related to peace and conflict studies with social and behavioral sciences focus.

Preparation for Course

P: P200 or P201 and three courses in peace and conflict studies or consent of PACS director.

Cr. 1-3.

Notes

May be repeated for a maximum of 6 hours credit.

Total Credits: 15

Piano Pedagogy Certificate

Program: Certificate in Piano Pedagogy

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center (RC) 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

The student learning outcomes for the degree are as follows:

- **Performance.** Students will demonstrate the ability to perform competently in public on a principal instrument or voice as a soloist and as a member of a major ensemble.
- **Music Theory.** Students will demonstrate:
 - knowledge of musical form, structures, concepts, and terms
 - skill and fluency in application through analysis
 - ability to compose within basic musical structures
 - perspective regarding historical styles and structures
 - ability to relate the cognitive to aural perception and to aesthetic response
- **Aural Perception.** Students will demonstrate the ability to:

- read and sing melodic lines with accurate intonation
- read and perform complex rhythms accurately
- recognize and notate melodic, rhythmic, and harmonic patterns and progressions
- **Keyboard.** All music majors will be able to use the keyboard as a basic tool and will demonstrate the ability to:
 - perform appropriate technical skills such as scales, arpeggios, etc.
 - play chord progression from Roman numerals
 - improvise
 - play “by ear” and from lead sheets
 - harmonize melodic lines
 - perform repertoire at the intermediate level
 - transpose simple pieces and lead sheets
 - sight read at the late elementary level
 - play from 4-part open score.
- **Technology.** Students will demonstrate a basic overview of how technology serves the field of music as a whole including the following:
 - knowledge of computer hardware
 - ability to use notational software
 - ability to use the Internet as a resource for research.

Program Requirements

If you intend to be a professional piano studio teacher, you may earn the certificate in piano pedagogy by satisfying the requirements of IPFW (see Part 8) and the College of Visual and Performing Arts (see Part 4), completing the following courses, and earning a grade of C or better in each:

- Credits in applied music Credits: 8
- Credits in ensemble course(s) Credits: 2

MUS E193 - Piano Pedagogy I

Observation and assistance in piano classes for young students. Class discussion will involve evaluation of teaching; readings from pedagogical literature and on the business of music; survey of methods, teaching materials, and literature. Both courses involve one hour of observation per week.

Preparation for Course

E193 is P: for E194.

Cr. 2.

Notes

Consent of instructor.

MUS E194 - Piano Pedagogy II

Observation and assistance in piano classes for young students. Class discussion will involve evaluation of teaching; readings from pedagogical literature and on the business of music; survey of methods, teaching materials, and literature. Both courses involve one hour of observation per week.

Preparation for Course

E193 is P: for E194.

Cr. 2.

MUS E293 - Piano Pedagogy III

Class meetings cover assigned readings, teaching techniques, and materials. Editions and business practices. Students assist and teach in class piano labs, and teach three private students in the preparatory program.

Preparation for Course

P: E194.

Cr. 2.

MUS E294 - Piano Pedagogy IV

Class meetings cover assigned readings, teaching techniques, and materials. Editions and business practices. Students assist and teach in class piano labs, and teach three private students in the preparatory program.

Preparation for Course

P: E194.

Cr. 2.

MUS M201 - Music Literature I

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sight-singing and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sight-singing and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

MUS X296 - Applied Music Upper Divisional Jury Examination

A 15- minute performance of literature selected by the applied music instructor and presented for the applied music instructor and the resident faculty. Successful completion of X296 is required to begin preparation for a recital. For further information and requirements, see the Department of Music Student Handbook.

Preparation for Course

P: Enrollment in or successful completion of MUS T214, T216, M202, and the fourth semester of applied music at the 300 or 400 level on the same instrument.

Cr. 0.

MUS X299 - Piano Proficiency Examination

Requirements are passed individually: technique; sight reading of a hymn, a piano piece, and a rhythmic pattern; transposition of simple folk songs and accompaniment; sight reading of a lead sheet and a harmonized melody without chords notated; keyboard theory skills, including realization of Roman numeral progressions; improvisation; folk songs

by ear with accompaniment. Complete information available in the music department office.

Preparation for Course

P: P131 or P141, permission of the instructor required, in the semester of completion of the examination.

Cr. 0.

Total Credits: 30

Quality Certificate

Program: Certificate

**Department of Manufacturing and Construction Engineering Technology and
Interior Design**

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6385 ~ www.mcet.ipfw.edu

The student learning outcomes for the degree are as follows:

- An appropriate mastery of the knowledge, techniques, skills and modern tools of quality, metrology, SPC, SQC, TQM, ISO standards, and DOE.

This certificate program prepares graduates with skills in techniques related to quality, such as design of experiments, metrology, and statistical process control. The program provides focused study in the techniques of maintaining and improving quality of manufacturing processes.

Credits earned in the certificate program may be applied toward the associate and bachelor's programs in industrial engineering technology.

Program Requirements

To earn the certificate, you must fulfill the requirements of IPFW (see Part 7) and complete the following courses, earning a grade of C or better in those courses that serve as prerequisites:

IET 105 - Industrial Management

An overview of industrial engineering technology including manufacturing organization and quality production.

Cr. 3.

Hours

Class 3,

IET 204 - Techniques of Maintaining Quality

An analysis of the basic principles of quality control, includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X and R charts and uses of mechanical, electronic, air, and light devices for checking and measuring to determine quality levels of acceptance.

Preparation for Course

C: MA 159 or MA 153.

Cr. 3.

Hours

Class 2, Lab. 2,

Grade of C or better required

IET 304 - Advanced Metrology

Variable and attribute gage capability studies; measurements and calculations of repeatability, reproducibility, bias, stability, and linearity; measurement uncertainty; traceability to NIST standards; inspection of parts using GD&T callouts.

Preparation for Course

P: 204, MET 223.

Cr. 3.

IET 454 - Statistical Process Control

Online process control including design and analysis of process control charts and sampling plans.

Preparation for Course

P: 204, STAT 301.

Cr. 3.

Hours

Class 3,

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Grade of C or better required

One of the following: Credits: 5-6

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
Grade of C or better required
or

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Grade of C or better required

Total Credits: 20-21

Risk and Emergency Management Certificate

Program: Certificate in Risk and Emergency Management
Division of Public and Environmental Affairs

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The student learning outcomes for the degree are as follows:

- The certificate in Risk and Emergency Management will inform and enhance the knowledge base and skills level of those who are responsible for managing risks and emergencies.

The certificate in risk and emergency management is recommended for students from any major that, during their careers, may directly or indirectly be involved in managing emergencies and disasters. Students need not be enrolled in a degree program to complete this certificate.

To earn the certificate, students must complete at least 11 credit hours as residency credits at IPFW. A grade point average of 2.0 or higher is required in all course work credited toward the certificate.

Program Requirements

CS 292 - Intermediate Topics in Computer Science

Intermediate seminar addressing current topics or issues in computer science or information systems.

Preparation for Course

P: consent of instructor.

Cr. 2-3.

Variable Title

(V.T.)

Approved topic: Technology and Emergency Management (SPEA V465, GIS Mapping, may be taken as substitute)

HSC 499 - Special Topics in Health Sciences

Hours, subject matter, and credit to be arranged by staff. Course may be repeated for credit up to 9 credits.

Preparation for Course

P: As determined by HSC faculty.

Cr. 2-6.

SOC S410 - Advanced Topics in Social Organization

An advanced course in social organizations, allowing for a more thorough coverage of selected topics, e.g. social stratification, formal organizations, urban social organization, education, religion, politics, demographics, social power, social conflict, social change, comparative social systems, race and ethnic relations, rural sociology, urban sociology, and work reorganization. May be repeated; however, only six hours may be applied to the requirements of the sociology major or minor.

Preparation for Course

P: SOC S161; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for use in fulfilling the Cultural Studies (Non-Western Culture) requirement only when the topic is Culture of China.

Approved Topic: The Social Dimension of Disasters (SPEA J370, The Social and Mental Health Dimensions of Disasters, may be taken as a substitute)

SPEA V275 - Introduction to Emergency Management

An examination of the background and nature of the profession, the central theoretical debates concerning natural and human-induced disasters, mitigating and reacting to these catastrophic events, and the major roles and responsibilities of emergency managers. Current practical problems and future directions will be explored.

Cr. 3.

SPEA V387 - Public Administration and Emergency Management

An examination of the American federal system and how it affects policy making and emergency management. Topics include government programs, participation of agencies and actors from all three levels of government, the nonprofit sector, and the private sector. Administrative processes in managing major hazards and disasters will be presented.

Cr. 3.

SPEA V389 - Risk and Hazard Mitigation

An examination of the principles and practice of risk and hazard mitigation at all levels of government and private industry. The tools, techniques, resources, programs, intergovernmental relationships, public-private partnerships, and the broader social context involved in planning for organizational and business continuity and implementing risk reduction strategies are covered.

Cr. 3.

And Select One of the Following:

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

POLS Y401 - Studies in Political Science

Topic varies with the instructor and year; consult the Schedule of Classes for current information. May be repeated for credit with a different topic.

Cr. 3.

Variable Title

(V.T.)

Total Credits: 21

Supervisory Leadership Certificate

Program: Certificate

Division of Organizational Leadership and Supervision

College of Engineering, Technology, and Computer Science

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

The student learning outcomes for the degree are as follows:

- Students will demonstrate an understanding of contemporary issues and theories in the areas of leadership, human resources systems and team design and facilitation.
- Students will demonstrate an understanding of organizational behavior at the individual, group and organizational levels of analysis using theories derived from several behavioral sciences.
- Students will be able to apply theories to real organizational and leadership problems.
- Students will demonstrate effective oral and written communication skills.

This certificate program helps you prepare for supervisory leadership positions in any industry. The classes can later be applied toward an associate degree and bachelor's degree with a major in organizational leadership and supervision. Interested individuals must apply for the program before completing 9 hours of applicable course work.

The certificate option is available to community members who enter as non-degree seeking students and to students in good academic standing who are enrolled in non-OLS plans of study. OLS-degree-seeking students are not eligible to enter the certificate program.

To earn the certificate, you must fulfill the requirements of IPFW (see Part 8) and the College of Engineering Technology and Computer Science, Division of Organizational Leadership and Supervision (see Part 4), complete the following courses, and earn a grade of C or better in each course:

Program Requirements

- OLS Elective Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

Total Credits: 21

See the OLS advisor for a list of approved OLS electives.

Teaching English as a New Language Certificate

Program: Certificate in Teaching English as a New Language Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The undergraduate certificate in teaching English as a new language is intended primarily for students who are working towards a baccalaureate degree and wish to be trained in teaching English to non-native speakers. Other potential audiences include people who are preparing to live abroad or who wish to facilitate their employment abroad, and those who have creative, technical, or business expertise and wish to work with ENL students in professional settings. With the quickening expansion of English as the international language of art, commerce, education, science and technology, the need for qualified teachers continues to increase.

The required courses will familiarize students with the major theoretical foundations of teaching English as a new and additional language. Students will become acquainted with ENL pedagogy and resources and will acquire experience

by teaching ENL learners, with supervision, in real classrooms. The undergraduate TENL Certificate will be available to any student. It can stand alone as a separate credential or be integrated within the requirements of the B.A. program in English as an option in the English Language Concentration. Some courses may also apply to a degree from the School of Education.

In addition, **licensure endorsement** is available to TENL certificate students who are licensed teachers, candidates who are already licensed in specific content area(s) at specific grade levels, or prospective teachers who are in the process of obtaining such a license. Please see the special requirements below for the licensure endorsement

Certificate Requirements

The TENL certificate will require satisfactory completion of eighteen credit hours of course work in the areas of ENL pedagogy and materials preparation, second language acquisition theories, sociolinguistics and cultural issues, English grammar, and practical classroom experiences. No course with a grade below 2.0 will count toward the TENL certificate. Satisfactory completion of LING L103 or equivalent is a prerequisite for all courses at the 300-level and higher.

Courses Required for the Undergraduate Certificate in TENL

(LING L103 or equivalent is a prerequisite for all TENL courses, 300-level or higher.)

Grammar Credits: 3

ENG G302 - Structure of Modern English (TESOL)

Linguistic analysis of present-day spoken and written English, with attention to its phonemic, morphemic, and syntactical systems and its system of expressive features.

Cr. 3.

Practicum Credits: 3

LING L470 - TENL Practicum

Under supervision, students teach English as a new language. The course provides experience in instruction, assessment, placement, and materials preparation. Classroom lectures, discussions, and assigned readings focus on teaching English as a new language.

Preparation for Course

P: permission of instructor.

Cr. 3.

Sociolinguistics Credits: 3

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as

issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

Language Acquisition Credits: 3

ENG G432 - Second Language Acquisition

An introduction to a broad range of issues in the field of second language acquisition, providing the student with an overview of the most important approaches to the fundamental questions of how people learn a second language. Provides students with basic knowledge of theories of second language acquisition, and an understanding of how theoretical perspectives inform practical application.

Cr. 3.

Methods Credits: 6

LING L321 - Methods and Materials for TESOL I

This course provides an overview of teaching English to speakers of other languages with an emphasis on methodology, examining different approaches, techniques, and various instructional options in light of different teaching contexts and learners' needs.

Cr. 3.

LING L322 - Methods and Materials for TESOL II

This course aims at enhancing participants' understanding of theoretical principles underlying the preparation of ESL instructional materials as well as course participants' knowledge and skills in materials preparation and effective implementation. It also addresses issues related to course design, content selection and organizing, and language assessment.

Cr. 3.

Total Credits: 18

Admission Requirements

The existing requirements for admission as an unassigned or non-degree-seeking student apply to those who wish to earn the certificate as a stand-alone credential. Existing requirements for admission, completion, and residency, and eligibility apply to those who wish to earn the certificate as part of a degree program.

As of Fall, 2009, up to and no more than nine credit hours of required courses taken prior to formal admission to the TENL Program will be accepted as applying to completion of certificate requirements.

Licensure Endorsement

The Department of English and Linguistics, in conjunction with the School of Education (SOE), offers an endorsement in Teaching English as a New Language to licensed teachers, candidates who are already licensed in specific content area(s) at specific grade levels, or prospective teachers who are in the process of obtaining such a license.

Licensure Endorsement Requirements

The licensure endorsement will require satisfactory completion of eighteen credit hours of course work in the areas of ENL pedagogy and materials preparation, second language acquisition theories, sociolinguistics and cultural issues, English grammar and practical classroom experiences.

In addition to regular IPFW admission standards as presented in the IPFW Bulletin, students must meet the School of Education's requirements for admission to the teacher education program and meet the following criteria:

- Success passage of PPST
- Minimum GPA of 2.5
- Completion of LING L103

Students must maintain a minimum overall GPA of 2.5 or better (of 4.0) in the program. No course with a grade below 2.0 will count toward the licensure endorsement. Satisfactory completion of LING L103 or equivalent is a prerequisite for all courses at the 300-level and higher.

After completion of all coursework in the TENL Certificate program, those seeking the licensure endorsement must apply to the state of Indiana to have the endorsement applied to their license. Students will be assisted with applications through the Department of English and Linguistics and the School of Education.

Women's Studies Certificate

Program: Certificate

College of Arts and Sciences

Classroom-Medical Building 35F ~ 260-481-6711 ~ www.ipfw.edu/wost

The student learning outcomes for the degree are as follows:

- demonstrate understanding of major categories of feminist critical analysis, such as gender, race and class
- demonstrate the ability to think critically about major issues in feminism

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

See College of Arts and Sciences in Part 4 for further information.

The Women's Studies Certificate is designed for students majoring in academic programs outside the College of Arts and Sciences who are interested in a concentration of course work in women's studies. This program is also appropriate for community members who wish to augment or update past academic studies in a field that has relevance for today's more diverse workforce and society. The required 21 credits are allocated as follows and must be completed with a grade of C or higher in each course:

Program Requirements

- One cross-listed course from the student's department, division, or school to be counted in the student's major as well as in the certificate, or any other WOST-prefixed or cross-listed course Credits: 3
- WOST-prefixed or cross-listed course in science or social science Credits: 3
- WOST-prefixed or cross-listed course in visual arts or humanities Credits: 3
- WOST-prefixed or cross-listed course Credits: 3

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

WOST W301 - International Perspectives on Women

Feminist analysis of women's legal, social, and economic status in two or more cultures other than those of the United States, Canada, Australia, New Zealand, and Europe. Interdisciplinary approach. May be repeated once with a different topic.

Preparation for Course

P: WOST W210 and sophomore, junior, or senior standing or consent of instructor.

Cr. 3.

Variable Title

(V.T.)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

WOST W400 - Topics in Women's Studies

An interdisciplinary approach to selected ideas, trends, and problems in women's studies. The capstone course focuses on issues and controversies in the new scholarship on women. Specific topics announced in Schedule of Classes

Preparation for Course

P: junior or senior standing, 12 credits of women's studies course work or permission of instructor.

Cr. 3.

Variable Title

(V.T.)

(the capstone course)

Total Credits: 21

Concentration

Accounting Area Concentration

Program: B.S.B.

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The accounting concentration provides you with academic preparation for careers in auditing, corporate accounting and management services, governmental and nonprofit organizations, public accounting, and taxation. In addition, it equips you with a management tool for intelligent analysis, prediction, decision making, and control.

Upon successfully completing the B.S.B. and accounting concentration requirements, you may be eligible to sit for various professional certification examinations. Students interested in sitting for these examinations should check with the Department of Accounting and Finance (Neff 350) for further information.

You are encouraged to inquire about accounting internships through the co-op program that may be available to you.

To earn the accounting area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

BUS A311 - Intermediate Accounting I

Theoretical framework and application of generally accepted accounting principles to the preparation of financial statements, with emphasis upon the assets and liabilities of an enterprise.

Preparation for Course

P or C: BUS A317; admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A317 - Computer-Based Accounting Systems

This course presents a framework for students to help them think in innovative ways about providing accounting user support through the use of technology. The focus of the course is on understanding organizations (their activities, processes, and objectives) in order to understand how technology can be used as an enabler of organization activities and objectives. Topics covered include modeling business processes, revenue and expenditure cycles, information systems architecture, systems analysis and design, internal control systems, and EDP controls.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria

(see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A325 - Cost Accounting

Conceptual and procedural aspects of management and cost accounting. Product costing, cost control over projects and products; decision-making emphasis; profit planning; quantitative modeling; and computer applications.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A331 - Taxation of Business Entities

An introduction to the income taxation of business entities including C corporations, partnerships, S corporations, limited liability companies, and some overlapping material of individual taxation. This course will include the basic topics of tax research, gross income, business deductions, property transactions, and special entity formation rules.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Credits in four of the following Credits: 12

BUS A312 - Intermediate Accounting II

A continuation of the work begun in A311. Theoretical framework and application of generally accepted accounting principles to the preparation of financial statements, with emphasis upon owners' equity and special topics such as earnings per share, pensions, leases, income tax allocation, and cash flow statement.

Preparation for Course

P: BUS A311.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A314 - Financial Statement Analysis

Analysis of financial statements to provide basis from which informed decisions concerning investments, financing opportunities, and appropriate financing instruments can be made.

Preparation for Course

P: BUS A311.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A332 - Taxation of Individuals

Federal individual taxation will be emphasized with an exposure to business taxation. Basic tax concepts will be examined through discussions on filing status, exemptions, gross income, exclusions, deductions, employee expenses, alternative minimum taxes, tax credits, and computations leading to the preparation of individual tax returns. Open to majors and nonmajors.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A422 - Advanced Financial Accounting

Theory and problems of business combinations, foreign currency transactions, and partnerships.

Preparation for Course

P: BUS A312.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A424 - Auditing

Public accounting organization and operation; review of internal control systems, verification of balance sheet and operating accounts; the auditor's opinion.

Preparation for Course

C or P: BUS A312; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A425 - Contemporary Accounting Theory

Analyzes and evaluates the rationale for and implications of underlying financial accounting procedures and concepts. Extensive consideration is given to the effects of alternative accounting principles on the measurement of a firm's earnings and financial position.

Preparation for Course

P: BUS A312; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A437 - Advanced Management Accounting

Strategic cost management practices including activity-based management, activity-based budgeting and activity-based costing, target costing, theory of constraints, quality costs, the cost of capacity, the balanced scorecard, and performance measures for automated factories. Learn enhanced problem-solving skills and tools, increased critical-thinking skills, and improved presentation and speaking skills.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS A439 - Advanced Auditing

Development of audit skills in planning, account analysis, workpaper techniques. Issues of legal liability. Case studies involving various audit issues.

Preparation for Course

P: BUS A424.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L303 - Commercial Law II

Emphases on Uniform Commercial Code (sales, negotiable instruments, and secured transactions), business organizations and relationships, bankruptcy, and the law of ownership, custody, and possession. Required for business B.S. majors in the accounting concentration.

Preparation for Course

P: BUS L200; admission to business B.S. or P.B.A. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Note

1. The department offers a certificate program in accounting for individuals who have completed a nonaccounting baccalaureate degree. See Accounting under Program Descriptions in the *Bulletin*.
2. The department offers an optional program to accommodate Indiana's new requirement of 150 hours of education to obtain the CPA certificate. You may contact the department chair for further information.

Business Economics and Public Policy Area Concentration

Program: B.S.B.

Department of Economics

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6794 ~ www.ipfw.edu/bms

The business economics concentration explores the economic environments in which businesses must operate, as well as the interrelationships among micro-and macroeconomic conditions, private-sector decision making, and governmental programs. You have opportunities to study economic problems and their alternative solutions. You may also study aspects of employment, inflation, international trade, and other economics subject areas.

If you wish to become a professional economist, you should prepare for graduate study by taking additional courses in mathematics, statistics, computer science, and/or research methods.

To earn the business economics and public policy area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in an approved 300/400 level economics course Credits: 6
- ECON E406 Senior Seminar in Economics Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Total Credits: 15

English and Communication Media Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, teacher certification, writing, and language

Program Requirements

- Credits in two 300- or 400-level writing courses (ENG W331, W350, W365, W398, W420, W462; JOUR J310) Credits: 6
- Credits in classics, comparative literature, English, film, or folklore Credits: 3
- JOUR J200 - Reporting, Writing and Editing I . Credits: 3

One of the following Credits: 3

- COM 250 - Mass Communication and Society
- JOUR C200 - Mass Communications
- JOUR J110 - Foundations of Journalism and Mass Communication

Note

In addition, you must complete a minor in one of the following outside fields: business studies, communication studies, journalism, international language and culture studies, professional writing, or fine arts. No more than 6 credits applied to the minor will apply to the major.

English Language Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, teacher certification, writing, and communication media.

Program Requirements

One of the following Credits: 3

- LING L103 - Introduction to the Study of Language
- LING L303 - Introduction to Linguistic Analysis

One of the following Credits: 3

- ENG G301 - History of the English Language
- ENG L304 - Old English Language and Literature

One of the following Credits: 3

- COM 521 - Theories of Rhetoric
- ENG W310 - Language and the Study of Writing
- ENG W462 - Studies in Rhetoric and Composition
- LING L360 - Language in Society

Credits In Two Additional Courses in Linguistics Credits: 6

- Including AUS 306, the English language, anthropological linguistics (including ANTH L200 and L400), or psycholinguistics (including AUS 181, 182, 309; PSY 426, 526)

Note

The department recommends the study of a second foreign language with a foreign-language minor.

English Literature Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include teacher certification, writing, language, and communication media.

Program Requirements

- Credits in one additional course in American literature. Credits: 3
- Credits in one additional course in British literature before 1700. Credits: 3

- Credits in one additional course in British literature after 1700. Credits: 3
- Credits in two additional courses in classics, comparative literature, English, film, or folklore. Credits: 6

Note

If you plan to work toward advanced degrees (M.A., Ph.D.) in English, the department recommends additional period or major-author courses and study of a second foreign language. If you are a prelaw student, the department recommends upper level writing courses.

English Teacher Certification Concentration

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include literature, writing, language, and communication media.

The student learning outcomes for the degree are as follows:

- Students demonstrate their acquisition of the fundamental skills necessary for the secondary education classroom; knowledge of American and British literary texts; fundamental rules of oral and written communication; acquisition of pedagogical methodologies necessary for the instruction of literature and language in a secondary education environment.
- Students exhibit the application of their knowledge of literature, language, and communication to the teaching of others.

(21 Credits Plus 32 Professional Education Credits)

To be eligible for teacher certification, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Program Requirements

- Credits in one additional course in language study. Credits: 3
- Credits in one course in ethnic, minority, or non-Western literature. Credits: 3
- Credits in one course in Western literature other than British or American. Credits: 3
- Credits in one course in mass communication, including journalism and film. Credits: 3
- Credits in one additional course, 300 level or higher, in writing, literature, language study, or mass communication. Credits: 3
- ENG L391 - Literature for Young Adults. Credits: 3
- ENG W400 - Issues in Teaching Writing. Credits: 3

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC M447 - Methods of Teaching High School English

Public school participation required.

Cr. 3.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

Middle School Certification (Recommended)

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

Credits: 4

Note

A certificate or licensure endorsement to teach English as a New Language is also available.

Finance Area Concentration

Program: B.S.B.

Department of Accounting and Finance

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 350 ~ 260-481-6471 ~ www.ipfw.edu/bms

The finance concentration is composed of courses that have been selected to familiarize you with the theory, instruments, and institutions of finance, and with a financial approach for structuring and analyzing management decisions. The study of finance provides a basis for careers in corporate financial management, as well as executive positions in commercial banking, savings and credit institutions, and the investment field.

To earn the finance area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

BUS F303 - Intermediate Finance

Advanced treatment of corporate financial management. Covers all major areas of corporate financial decisions: capital budgeting, dividends, capital structure, cash-flow projections, mergers, and acquisitions.

Preparation for Course

P: BUS F301.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F310 - Financial Statement Analysis - Finance Perspective

Analysis of financial statements to provide basis from which informed decisions concerning investments, financing opportunities, and appropriate financing instruments can be made.

Preparation for Course

P: BUS F301.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F345 - Money/Banking/Capital Markets

An analysis of the interrelated financial systems of central banks, private banks, and other sources and users of financial capital. Theoretical, empirical, policy, and institutional issues are analyzed using economics and finance. Topics include the theory of money demand and supply, monetary policy and central banks, interest rate determination, financial intermediaries, and international financial markets.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

Credits in four of the following: 12

BUS A325 - Cost Accounting

Conceptual and procedural aspects of management and cost accounting. Product costing, cost control over projects and products; decision-making emphasis; profit planning; quantitative modeling; and computer applications.

Preparation for Course

P: admission to degree program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F420 - Equity and Fixed Income Investments

Conceptual and analytical framework for formulating investment policies, analyzing securities, and portfolio strategies for the individual and corporate investor.

Preparation for Course

P: BUS F303.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F446 - Management of Commercial Banks and Other Financial Institutions

Management policy and strategy decisions including asset, liability, and capital management within the legal, competitive, and economic environment.

Preparation for Course

P: BUS F301, F345; senior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS F494 - International Finance

An introduction to international capital budgeting and cash management, investing, multinational transfer pricing, exchange rate risk, hedging techniques, international trade practices, and other issues that will provide an overview of global financing practices.

Preparation for Course

P: F303.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Total Credits: 24

Management and Administration Area Concentration

Program: B.S.

Department of Management and Marketing

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6470 ~ www.ipfw.edu/bms

The management and administration concentration provides you with an opportunity to study a broad scope of business and economics subjects, as well as concepts and theories of managing complex business operations. The courses stress goal setting, planning, controlling, and problem solving in the context of major business firms in domestic and international environments.

To earn the management and administration area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in two additional 400-level management courses (Courses that start with D, K, W, P, or Z) The one exception is M426 Sales Management, which will also count as a management elective. Credits: 6
- One semester of a foreign language of your choice. Credits: 3
- ILCS I350 International Communications. Credits 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K327 - Deterministic Models in Operations Research

Philosophy and techniques of operations research and management science as they relate to business decision making. Topics include behavioral model building, optimization techniques, sensitivity analysis, and dynamic analysis.

Preparation for Course

P: BUS P301; MA 229; Junior class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS Z440 - Personnel: Human Resources Management

Nature of human resource development and utilization in the American society and organization; government programs and policies; labor force statistics; personnel planning, needs forecasting; selection, training, and development of human resources; integration of governmental and organizational programs.

Preparation for Course

P: BUS Z302.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Total Credits: 21

Marketing Area Concentration

Program: B.S.

Department of Management and Marketing

Richard T. Doermer School of Business and Management Sciences

Neff Hall Room 340 ~ 260-481-6470 ~ www.ipfw.edu/bms

The marketing area concentration is concerned with the movement of goods and services from the producer to the customer. It encompasses such topics as consumer behavior, product development, pricing, channels of distribution, promotion, marketing research, and effective management of corporate marketing operations.

To earn this area concentration, you must earn a grade of C or better in each of the following courses:

Program Requirements

- Credits in two additional 400-level marketing courses Credits: 6

- (BUS courses starting with M4__ meet this requirement, along with the K490 ECommerce course and D490 Special Studies in International Business.)
- One semester of a foreign language. Credits 3
- ILCS I350 International Communication. Credits 3

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M303 - Marketing Research

Topics include defining research objectives, syndicated and secondary data sources of marketing information, exploratory research methods, survey research design, experimental design, and data analysis.

Preparation for Course

P: BUS M301. Focuses on the role of research in marketing decision-making.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS M450 - Marketing Strategy and Policy

Provides a capstone to marketing course sequence by drawing on and integrating concepts previously studied. Focuses on management decision problems in marketing-strategy design and the application of analytical tools for optimizing marketing decisions.

Preparation for Course

P: BUS M303; senior class standing. Ideally taken during student's last semester.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ILCS I350 - International Communication

This course examines international communication, global business etiquette, and it teaches cultural sensitivity and awareness based on the study of the interfaces of language, culture, and communication.

Preparation for Course

P: FREN F111, GER G111, or SPAN S111.

Cr. 3.

Total Credits: 21

Writing Concentration

Program: Concentration

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

To earn a BA with a major in English, you must complete the core requirements and credits in one of five area concentrations. Other concentrations include: literature, teacher certification, language and communication media.

Program Requirements

- Credits in three W-prefixed courses in writing (ENG W203 or courses above the 200 level). Credits: 9
- Credits in one course in writing above the 300 level. Credits: 3
- Credits in one additional course in classics, comparative literature, English, film, or folklore. Credits: 3

Note

If you are interested in writing professionally, the department recommends a minor in business studies or journalism.

Dual Degree

Electrical Engineering (B.S.E.E.) and Physics (B.S.) Dual Degree

Programs: B.S.E.E. & Physics (B.S.)

Department of Engineering & Department of Physics

College of Engineering, Technology, and Computer Science & College of Arts and Sciences

*Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu
Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/*

You may choose to complete a dual degree in Electrical Engineering and Physics by completing all of the requirements in both the BSEE and the Physics (B.S.) programs. With overlapping coursework, the dual degree requires 156 hours.

Endorsement

Computer Education Endorsement

Program: Endorsement

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

In addition to the major in secondary education, students may earn a Computer Education Endorsement. This endorsement will be added to a license at the same school setting(s) as other subject areas listed on the license.

Program Requirements

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

EDUC W310 - Computer-Based Teaching Methods

Students will study the methods for teaching programming, application of pedagogical and technical principles of software design, software evaluation, and staff development techniques in computer-based education.

Preparation for Course

P: W210.

Cr. 3.

EDUC W410 - Practicum in Computer- Based Education

The culminating experience for candidates seeking to be licensed in computer instruction. Either eight weeks of full-time fieldwork or 16 weeks of half-time fieldwork in an educational setting that incorporates instructional computing.

Preparation for Course

P: W310.

Cr. 3-8.

Credits: 3

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following:

EDUC W210 - Introduction to Computer- Based Education

Students achieve facility in BASIC at the intermediate level; are introduced to social, moral, and technical issues relating to educational computing; and examine a variety of educational software.

Preparation for Course

P: W200 or consent of instructor.

Cr. 3.

Total Credits: 26

Middle School/Junior High Endorsement

Program: Endorsement

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

In addition to the major in elementary education or secondary education students may earn a middle school/junior high endorsement in language arts, mathematics, earth and space science, and/or historical perspectives. Each endorsement requires 24 credits of content courses and a 4-credit middle school practicum. If completing more than one endorsement, you only need one practicum for all endorsements.

- **EDUC M470 Practicum: Middle School: Credits: 4**

Language Arts (24 credits)

- British literature elective (300 level or higher) Credits: 3
- American literature elective (300 level or higher) Credits: 3

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

Multicultural Literature Cr. 3.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

EDUC E340 - Methods of Teaching Reading I

This course describes and appraises the methods, materials, and techniques employed in a reading program. Public school participation required.

Cr. 2-3.

Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Earth and Space Science (24 credits)

- Science electives Credits: 0–2

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

One of the following Credits: 3

BIOL 349 - Environmental Science

Examines current major environmental issues through an investigation of the scientific and political aspects of human population growth, degradation of natural resources, and environmental regulations. Cannot be used as a Group A or B elective for biology majors.

Preparation for Course

P: junior or senior class standing.

Cr. 3.

Session Indicators

(spring)

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

One of the following Credits: 3

EDUC Q200 - Introduction to Scientific Inquiry

Course provides the elementary education major with background in the process skills of science, with emphasis on the integration of these skills and science concepts.

Cr. 1-3.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Mathematics (24 credits)

- Computer science elective Credits: 3
- Mathematics, computer science, or statistics electives Credits: 2–3

MA 101 - Mathematics for Elementary Teachers I

A teacher's perspective of the mathematics of the elementary school curriculum; in particular, mathematical problem solving, sets, numeration, and operations on the whole numbers.

Preparation for Course

P: MA 109 with a grade of C- or better or placement at or above the MA 113 level and one year of high school geometry.

Cr. 3.

MA 102 - Mathematics for Elementary Teachers II

A teacher's perspective of the mathematics of the elementary school curriculum, including operations on the integers and rationals, probability, and statistics.

Preparation for Course

P: MA 101 with a grade of C- or better.

Cr. 3.

MA 103 - Mathematics for Elementary Teachers III

Geometry and measurement concepts appropriate for the elementary school curriculum, including metric and nonmetric properties of geometric figures, measurement, coordinate geometry, graphs, and real-world applications of geometry.

Preparation for Course

P: MA 102 with a grade of C- or better and one year of high school geometry.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

(or waiver)

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

One of the following Credits: 3-4

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Historical Perspectives (24 credits)

- American history Credits: 3
- Sociology Credits: 3
- Political science Credits: 3
- Social studies electives Credits: 6

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

One of the following Credits: 3

FWAS H201 - Humanities I: The Ancient World

This interdisciplinary course investigates art, architecture, literature, philosophy, and religion in the ancient world (to 1300 A.D.) from a multicultural perspective. The focus is on representative works; the course proceeds chronologically and each work is given a historical/cultural setting. The practicum develops critical appreciation through interpretive reading and observation.

Preparation for Course

P: ENG W131.

Cr. 3.

FWAS H202 - Humanities II: Foundations of the Modern Western World

Investigates art, architecture, literature, philosophy, religion, and music from 1300 to present. Primary focus on Western tradition. Representative works treated chronologically in their historical/cultural settings. Practicum develops critical appreciation through interpretive observation, listening, and reading.

Preparation for Course

P: ENG W131; R: H201.

Cr. 3.

HIST H232 - The World in the 20th Century

Shaping of the contemporary world with an emphasis on the reaction of non-Western peoples to Western imperialism.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Honors**Biology Honors Program**

You may earn an honors degree in biology by achieving an overall GPA of 3.00 or higher and a biology GPA of 3.50 or higher, conducting a two-semester (6-credit) research project, preparing a senior thesis based on the research project, and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Geology Honors Program**Program: Honors Program****Department of Geosciences****College of Arts and Sciences**

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

Students are encouraged to participate in the departmental honors program. To complete the program, you must maintain a GPA of 3.5 or higher in geology and a cumulative GPA of 3.3 or higher, and must complete at least 1 credit of GEOL G499 Honors Research in Geology leading to a thesis, the results of which must be publicly presented.

History Honors Program**Program: Honors****Department of History****College of Arts and Sciences**

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

A student may earn an honors B.A. degree in history by achieving an overall GPA of 3.5 and a philosophy GPA of 3.5 or higher; conducting a two-semester (6 credit) research project; preparing a senior thesis based on the research project;

and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Honors Program Certificate

Program: Certificate All Baccalaureate Degrees

Walb Union G25 ~ 260-481-6924 ~ www.ipfw.edu/honors

The student learning outcomes for the certificate are as follows:

Students are expected to demonstrate the following skills:

- Critical thinking
- Analysis and synthesis
- Problem solving
- Clear oral and written expression
- Ability to conduct research
- Independent thinking

The Honors Program is an undergraduate program that seeks to create learning opportunities and an environment of intellectual excitement and discovery through enriched courses of study and activities within a learning community. Through involvement with the Honors Program, honors students enter into a partnership of learning that extends well beyond the classroom to incorporate an interdisciplinary approach with career-oriented skills. Rich course opportunities and tailored projects create an individual curriculum for each student.

The program is open to students of all majors and undergraduate degrees. Traditional incoming students become eligible for the Honors Program by meeting any one of the following criteria: placing in the top 10 percent of their high school's graduating class, scoring a 650 SAT in any one category, or attaining a 1800 SAT (or 27 ACT) composite score. Any student may participate in the Honors Program after 12 or more credit hours with GPA-related grades at IPFW and a 3.3 GPA or higher. Transfer students eligible for the program must have at least 12 credit hours of GPA-related grades (A, B, C, D, F, IF) with an equivalent of at least a 3.5 GPA on a 4.0 scale from the transferring institution.

To earn the certificate along with the Honors Medal, you must fulfill the requirements of IPFW (see Part 8) and the Honors Program, which are as follows:

- 18 credits of honors coursework through honors courses or H-options
- An honors project (including presentation and paper).
- Honors courses that represent at least two disciplines.
- At least three honors credits at the 300-level or above.
- Both cumulative and honors GPA of 3.5 or higher.
- Fulfill the requirements for a baccalaureate degree at IPFW.

In addition, students are highly encouraged to earn at least three credits of non-project honors coursework through honors courses. Because the Honors Program is an undergraduate program, all of the requirements of the program must be completed while the student is pursuing an undergraduate degree. Upon completion of such a degree, further completion of program requirements will not take effect unless work toward a different undergraduate baccalaureate degree is undertaken.

Philosophy Honors Program

A student may earn an honors B.A. degree in philosophy by achieving an overall GPA of 3.5 and a philosophy GPA of 3.5 or higher; conducting a two-semester (6 credit) research project; preparing a senior thesis based on the research project; and giving an oral presentation of the thesis research. The senior thesis committee must be established one semester before graduation.

Psychology Honors Program

A student may earn an honors degree in psychology by completing all of the requirements toward the B.A., achieving an overall GPA of 3.5 or higher, and conducting a two-semester independent research project. In the first semester of independent research the student is to complete three credits of PSY 498 or PSY 590. In the second semester, the student is to complete an honors thesis, PSY 499. As part of the honors thesis, an oral presentation to the department is required.

Minor

Anthropology Minor

Program: Minor

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archaeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

If you are pursuing a major other than anthropology, you may earn a minor in anthropology by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements

Two of the following: Credits: 6

- Additional anthropology credits Credits: 9

ANTH B200 - Bioanthropology

An introduction to the biological nature of mankind. The evolution of human beings. An examination of speciation, race, and racial groups. The future evolution of humans.

Cr. 3.

Session Indicators

(fall, spring)

ANTH E105 - Culture and Society

An introduction to the variations and diversities of living human groups. Social structure, religion, ecology, marriage, and personality variations of peoples of the world. Emphasis on preliterate cultures.

Cr. 3.

Session Indicators

(fall, spring, summer)

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH P200 - Introduction to Prehistoric Archaeology

World archaeology in the framework of major prehistoric cultural innovations. History, techniques, methods, and significance of archaeological research.

Cr. 3.

Session Indicators

(fall, spring)

Total Credits: 15

Applied Ethics Minor

Program: Minor

Department of Philosophy

College of Arts and Sciences

Classroom Medical 23 ~ 260-481-6366 ~ www.ipfw.edu/phil

A minor in applied ethics; including human rights issues, complements a major in such fields as anthropology, biology, business, communication, English, health sciences, history, psychology, or sociology. The minor also enhances your preparation for graduate study in any of these fields or in law, medicine, natural science, philosophy, religion and theology, or social work.

To earn a minor in applied ethics, you must complete the following credits with a grade of C or better in each course; at least 8 of the credits must be earned as resident credit at IPFW:

Program Requirements

- Credits in an applied ethics course (e.g., PHIL 312, 326, 327, or 328) Credits: 3
- Credits in another PHIL course at the 300 level or above Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

or

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

PHIL 480 - Practicum in Applied Ethics

Students will be assigned a definite task relevant to their educational interests in applied ethics. Students may be placed in appropriate cooperating local social-service agencies, educational institutions, legal services offices, businesses, or medical facilities. Work will be supervised by the department and the agency. Research and written reports will be required.

Preparation for Course

P: junior class standing and consent of instructor.

Cr. 3.

Total Credits: 15

Art History Minor

Program: Minor

Department of Visual Arts/Fine Arts Program

College of Visual and Performing Arts

Visual Arts 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa

A student may earn a minor in Art History by completing 18 credit hours of FINA Art History courses with a grade of C or better in each class. The 6 classes must include H111 and H112. Below is a listing of courses offered.

Resident Requirements Completion of at least 9 resident credits at the 200 level or above is required for the minor.

Program Requirements

- Credits in art history selected from the following Credits: 18

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H311 - Art of the Ancient World

A comprehensive study of the art and theory of the Greco-Roman period.

Preparation for Course

P: H111 or permission of the instructor.

Cr. 3.

FINA H312 - Art of the Medieval World

A comprehensive study of the art and art theory of the Medieval period.

Preparation for Course

P: H111 or permission of the instructor.

Cr. 3.

FINA H313 - Art of the Renaissance and Baroque

A comprehensive study of the art and art theory in the Renaissance and Baroque periods.

Preparation for Course

P: H112 or permission of the instructor.

Cr. 3.

FINA H314 - Art of the Modern World

A comprehensive study of the visual arts in the 19th and 20th centuries.

Preparation for Course

P: H112 or permission of the instructor.

Cr. 3.

FINA H411 - 19th Century Art I

1780-1850. Major painters and artistic movements in Western Europe and the United States during the first half of the 19th century.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H412 - 19th Century Art II

Major painters and artistic movements in Western Europe and the United States during the second half of the 19th century.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H413 - 20th-Century Art: 1900-1924

European artists and movements of the first part of the 20th century: Symbolism, Fauvism, Expressionism, Cubism, etc., for painting, and Art Nouveau, de Stijl, Bauhaus, Sullivan, and early Wright for architecture.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H414 - 20th Century Art: 1925-Present

Painting, sculpture, and architecture from 1925 to the present. Emphasis on American developments, including historical background from Armory Show to migration of Surrealism, Abstract Expressionism, Op, Pop, Minimal, and Kinetic art. A world view of architecture will cover such topics as International Style and New Brutalism.

Cr. 3.

Hours

Class 3,

Dual Level Course

Eligible for graduate credit.

FINA H415 - Art of Pre-Columbian America

A survey of the arts of Mesoamerica, especially Mexico and Guatemala, until the time of the discovery of America.

Cr. 3.

Hours

Class 3,

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

FINA H495 - Readings and Research in Art History

May be repeated for a total of 12 credits at the graduate level.

Preparation for Course

P: consent of instructor.

Cr. 1-4

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit.

Total Credits: 18

Biology Minor**Program: Minor****Department of Biology****College of Arts and Sciences**

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

If you are pursuing a major other than biology, you may earn a minor in biology by completing each of the following courses with a grade of C or better and earning at least 10 credits as resident credit at IPFW:

Program Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Total Credits: 19

Business Studies Minor**Program: Minor**

SBMS Undergraduate Student Affairs Center

Richard T. Doermer School of Business and Management Sciences

Neff Hall 366 ~ 260-481-6472 ~ www.ipfw.edu/bms

The minor in business studies provides a fundamental background in the principles of business and economics. The minor is available to any IPFW student majoring in a nonbusiness bachelor's degree program. Your eligibility for this program is governed by the policies of the division/department in which you are enrolled. Please see your academic advisor for additional information.

To earn this minor, you must be regularly admitted to an IPFW bachelor's degree program that permits this option. All courses that compose this option have specific prerequisites. You must meet the prerequisites for each course and earn a grade of C or better in each course marked with an *. Some of these courses may be applicable to other requirements of your degree program. See your academic advisor for details.

Program Requirements

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

*

BUS A202 - Principles of Managerial Accounting

Introduction to concepts and issues of management accounting; budgeting, variance analysis, cost determination, and standard costs. Required for all business majors.

Preparation for Course

P: BUS A201.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

BUS L200 - Elements of Business Law

This course introduces the various legal rules governing contracts, their formation, performance, breach, and legal and equitable remedies. The primary focus will be on legal rules applicable to business.

Preparation for Course

P: sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS W204 - Social, Legal, and Ethical Implications of Business Decisions

The interaction of business and society beyond objective of profit maximization. Issues addressed include the interplay of social, political, legal, economic, global, and ethical variables as they influence the firm and its conduct of business operations. Such analysis will stress the historical, current, and projected role of business in society.

Preparation for Course

P: ECON E200 or E201; sophomore class standing.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

*

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

*

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

*

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
(or MA 165 or 223)

Two of the following: Credits 6

Upon completion of all above courses and after attaining junior class standing, you may select a maximum of two from the following:

BUS D300 - International Business Administration

Economic and cultural environments for overseas operations. Governmental policies and programs that affect international business. International dimensions of marketing, finance, accounting, taxation, and human resources with emphasis on management decisions and implementation.

Preparation for Course

P: junior class standing, ECON E201–E202.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS F301 - Financial Management

An overview of the theory of the essentials of corporate finance needed to compete effectively in an increasingly global environment. Topics include time value of money, forecasting, stock and bond analysis, project analysis, cost of capital, short-term asset analysis, global financial markets, and ethical considerations.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS M301 - Marketing Management in a Competitive Environment

Overview of marketing management in a dynamic competitive environment. Examines marketing principles and tools for decision-making, from both the firm's and the consumer's viewpoint. Applications to global markets and other business disciplines. Provides a firm foundation in marketing theory and marketing lexicon.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS P301 - Managing Operations in a Competitive Environment

An introduction to the principles of production and operations management that provides an integrated overview of the role of the operations function in gaining competitive advantage in a global environment. Topics include demand forecasting, product design, process materials management, planning and control, scheduling, and project management.

Preparation for Course

P: junior class standing; admission to business B.S. program.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

BUS Z302 - Management of Organizations and People

An introduction to organizational behavior and management systems, the history and functions of management, and an analysis of the dynamic environment under which organizations operate. Topics include managerial functions, measures of organizational effectiveness, individual and group behavior, leadership, motivation, and strategies for developing teamwork.

Preparation for Course

P: admission to business B.S. program.

Cr. 3

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

*

Note

As a major in another bachelor's degree program, you are not eligible to enroll in any additional business or economics courses. No more than 25 percent of a nonbusiness student's baccalaureate curriculum may be in subjects available in the Richard T. Doermer School of Business and Management Sciences.

Total Credits: 31

Chemistry Minor

Program: Minor

Department of Chemistry

School of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are pursuing a major other than chemistry, you may earn a minor in chemistry by completing the following courses with a grade of C or better and earning at least 13–15 credits as resident credits at IPFW:

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits in one of the following Credits: 3–4

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 383 - Physical Chemistry

Kinetic theory of gases, gas equations of state, Maxwell-Boltzmann distribution. Classical thermodynamics including the first, second, and third laws, spontaneity, chemical potential, phase equilibria. Introduction to quantum mechanics: postulates of quantum theory, linear operators, Heisenberg indeterminacy principle, Pauli principle, orbital and spin angular momentum. Simple quantum systems such as particle-in-a-box, harmonic oscillator, hydrogen atom. Symmetry. Atomic and molecular spectroscopy.

Preparation for Course

P: CHM 116, MA 261, and PHYS 251.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits in one of the following courses in analytical chemistry Credits: 4

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

One of the following sequences Credits: 8–10

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

or

CHM 261 - Organic Chemistry

Required for students majoring in chemistry or chemical engineering; recommended for other science majors and premedical and pre dental students. A comprehensive study of the chemical principles underlying aliphatic and aromatic compounds. Emphasis is placed on the commercial and laboratory syntheses of these materials as well as their uses. Mechanisms, stereochemistry, and spectroscopy are stressed to illustrate the logic inherent in the subject matter and to demonstrate the predictability of many of the chemical transformations discussed.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 262 - Organic Chemistry

A continuation of CHM 261, but with a broader scope. The chemistry of a variety of functional groups is discussed. Included are discussions of some compounds and reactions of biological significance.

Preparation for Course

P: CHM 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 265 - Organic Chemistry Laboratory

Laboratory experiments include a large number of techniques for sophisticated organic syntheses. The preparations are designed not only to illustrate the classical reactions discussed in CHM 261, but also to allow for wider application of the principles involved.

Preparation for Course

C: CHM 261.

Cr. 2.

Hours

Lab. 6

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 266 - Organic Chemistry Laboratory

A continuation of CHM 265. A substantial portion of the course is devoted to the methods employed in organic qualitative analysis. The student is expected to identify "unknowns" and mixtures and is introduced to some modern instrumental techniques.

Preparation for Course

P: CHM 265; C: CHM 262.

Cr. 2.

Hours

Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Total Credits: 26-29

Communication Studies Minor

Program: Minor

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

If you are pursuing a major other than interpersonal and organizational communication or media and public communication, you may earn this minor by completing the following requirements with a 2.0 or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

- Credits in communication courses approved for communication B.A. majors Credits: 6
- (We strongly suggest students consult with the Department of Communication advisor to select these courses)

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

COM 300 - Introduction to Communication Research Methods

Introduction to the development and application of historical, critical, and empirical research methods pertinent to communication problems. Fundamental concepts of problem identification, sampling, surveys, historical sources,

critical models, reliability, and validity of both measurement and research design in communication research.

Preparation for Course

P: COM 114.

Cr. 3.

COM 318 - Principles of Persuasion

Persuasion and its effects, ranging from individual influences to societal impacts. Various perspectives and models of persuasion are examined, including classical and modern approaches. Both theoretical and pragmatic considerations are introduced.

Preparation for Course

P: 114 or consent of instructor.

Cr. 3.

Total Credits: 18

Computer Science Minor

Program: Minor

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

If you are pursuing a major other than computer science, you may earn a minor in computer science by completing the following courses. Only computer science courses in which you have earned a grade of C or better can be applied to the degree or used to satisfy prerequisites.

Required Courses (14 Credits)

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

CS 200+ Electives (6 Credits)

Any CS 200 level, CS 300 level or CS 400 level courses except CS 306.

Total Credits: 20

Creative Writing Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

This program is available to all IPFW students except those pursuing the communication media, teacher-certification, or writing concentration with a major in English.

You may earn the minor by completing the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course.

Program Requirements

- One additional writing course, 300 level or above Credits: 3
- One additional course in classics, comparative literature, English, (except ENG W130, W131, W135, W233), film, folklore, or linguistics; or COM 436 or THTR 376 Credits: 3

ENG W203 - Creative Writing

Focus in either poetry or fiction writing. Exploration in imaginative writing with focus on one specific genre. May be repeated once for credit with a different topic.

Preparation for Course

P: W131 or equivalent.

Cr. 3.

One of the following: Credits: 3

ENG W301 - Writing Fiction

Further exploration in the art of fiction writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W203 (in fiction) or submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

ENG W303 - Writing Poetry

Further exploration in the art of poetry writing. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W203 (in poetry) or submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

One of the following Credits: 3

ENG W401 - Advanced Fiction Writing

Focused work in the art and profession of fiction writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

ENG W403 - Advanced Poetry Writing

Focused work in the art and profession of poetry writing. With permission of instructor, may be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: submission of acceptable manuscripts to instructor in advance of registration.

Cr. 3.

Total Credits: 15

Criminal Justice Minor**Program: Minor****Division of Public and Environmental Affairs**

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The minor in criminal justice offers you the opportunity to become more knowledgeable in the field of criminal justice and its policy implications. It is available to students who are enrolled in baccalaureate programs other than the Bachelor of Science in Public Affairs degree program with a major in Criminal Justice. The minor can enhance the career opportunities for liberal arts and other majors.

Program Requirements

Each minor requires 15 credit hours of specified courses with a 2.00 grade-point average, and none of the courses may be taken by correspondence through the Division of Continuing Studies. SPEA majors may only double-count 6 of the required 15 credit hours in other SPEA major or minor requirements. Students may earn more than one minor from SPEA, but each minor must have at least 9 credit hours that are not satisfying other major or minor requirements.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

C– or better required.

One of the following: Credits: 3

SPEA J201 - Theoretical Foundations of Criminal Justice Policies

This course examines the impact of sociological, biological, and economic theories of crime and the practice of criminal justice. Focus is upon the nature and importance of theory, context of theoretical developments, methods for the critical analysis of theoretical developments, and policy implications of the varying perspectives considered.

Preparation for Course

P: J101.

Cr. 3.

SPEA J301 - Substantive Criminal Law

The development, limitations, and application of substantive criminal law utilizing the casestudy method.

Preparation for Course

P: J101; R: J201 and J202.

Cr. 3.

An additional 9 credits of Criminal Justice electives (SPEA Jxxx) at the 300-level or above.

Total Credits: 15

Dance Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/thtr

You may earn a theatre dance minor by completing the following courses and earning a grade of C or better in each course.

Program Requirements

DANC 101 - Modern Dance I

Modern dance is an American art form that has been called "modern" because it broke away from the traditions and formal disciplines of classical ballet of the 19th century. It began as a freedom of expression, individuality, and spirit specifically at the time of the women's suffrage movement, Prohibition, WWI, and new movements in the arts. Over time, principles of the movement and technique were established by the pioneers of modern dance. Although these early pioneers had very different styles and back grounds, they were all serious about their art and creating a new form of dance we now call: modern dance.

Within this course, students will read about the early modern dance pioneers and begin learning the foundation of the art form through vigorous warm-ups and center practice. classes will also incorporate movement experiences,

discussion, improvisation, choreographic compositions, and dance viewing to acquaint students with a range of modern dance styles within a cultural and historical context. Musicality, movement dynamics, personal and period style, as well as the scientific and anatomical principles of dance technique will be discussed and emphasized. The student will be asked to investigate and explore their own mental, physical, and emotional nature in relation to dance and their dancing, so as to inform and expand their capabilities as a dancer and artist. Students will be exposed to improvisational movement as well within the course to help develop awareness of their own body's capabilities and expressiveness through self-exploration.

Cr. 2.

DANC 102 - Ballet I

This course provides a study of classical ballet for the beginner dancer. Classes are participatory, focusing on the development of proficiency in the execution of the classic ballet movement and vocabulary. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. Students will be involved in barre, center, and across the floor work along with in class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. May be repeated for up to six credits.

Cr. 2.

Subject Area

Theatre

DANC 103 - Jazz Dance I

A study of jazz dance, including early jazz and musical comedy as well as contemporary styles. Emphasis on current locomotor jazz techniques. May be repeated for up to six credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 121 - Tap Dance I

The emphasis in this course will be on learning basic steps and tap progressions. Class will include barre work, across the floor and center floor combinations. Graded technique will be incorporated to monitor progress. This class may be repeated for up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 134 - The Study of Movement in Human Society

Through the cross-cultural lens of dance anthropology, ethnology, aesthetics, and performance, we will study the meaning dance holds for its community of participants as well as how it functions in a particular society.

Cr. 3.

DANC 136 - Teaching Dance: Theories and Methods

Introduce students to theories and practices of teaching dance and creative movement to a variety of populations in diverse settings.

Cr. 3.

DANC 201 - Modern Dance II

A continuation and refinement of the basic modern dance techniques and principles addressed in DANC 101.

Preparation for Course

P: DANC 101 or permission of instructor.

Cr. 2.

DANC 202 - Ballet II

This course will build upon dancer's current technique. Classes are participatory, focusing on the further development to increase turnout, flexibility, and stage presence. Students will be involved in barre, center, and across the floor work, including more complex adagio, allegro, and turn combinations. This course will entail in-class discussions, readings, and dance compositions to form a deeper understanding and appreciation of the art of dance. The anatomical and scientific principles of dance technique along with musicality, phrasing, and movement dynamics will also be emphasized throughout the course. May be repeated for up to 6 credits.

Preparation for Course

P: DANC 102 or consent of instructor.

Cr. 2.

Subject Area

Theatre

DANC 203 - Jazz Dance II

Jazz Dance II is a continuation of Jazz I. further training of the dancer's body with more detailed warm-ups and combinations is the emphasis of the class. Preparing the dancer for performance level is stressed. May be repeated for up to six hours of credit. Credit may be granted by audition.

Preparation for Course

P: DANC 103 or THTR 117.

Cr. 2.

Subject Area

Theatre

DANC 221 - Tap Dance II

The emphasis in this course will be on building upon the basic steps and progressions achieved in beginning tap (DANC 121). Class will include barre work, across the floor and center combinations. As in Tap I, graded technique will be incorporated to monitor progress. This class may be repeated up to four credits. Credit may be granted by audition.

Cr. 2.

Subject Area

Theatre

DANC 240 - Fundamentals of Dance Composition

An introduction to the theory and practice of the principles and utilization of choreographic skills.

Cr. 3.

One of following Credits: 3

DANC 251 - Dance History

This course is designed to expose students to dance as a fundamental form of human expression. Varied forms of dance will be analyzed and discussed within a sociological, cultural, and historical framework. The focus of this course is the development of Western theatrical dance from the birth of ballet in the Renaissance courts through the eclectic marriage of dance forms found in 20th century America. Throughout this course, students should develop an understanding of dance as an art form.

Cr. 3.

Subject Area

Theatre

THTR 355 - American Musical Theatre

A study of the origin, artistry, history, and unique qualities of the American musical theatre.

Cr. 3.

Total Credits: 24

Economics Minor**Program: Minor****College of Arts and Sciences**

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

If you are pursuing a major other than economics, you may earn a minor in economics by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements

- Credits in two additional ECON courses at the 300–400 level: 6

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

One of following Credits: 3

ECON E321 - Intermediate Microeconomic Theory

Intermediate-level microeconomics; theoretical basis of demand; production; pricing under conditions of competition and monopoly; allocation and pricing of resources; partial and general equilibrium analysis; welfare economics.

Preparation for Course

P: ECON E201; junior class standing.

Cr. 3.

ECON E322 - Intermediate Macroeconomic Theory

Intermediate-level macroeconomics. National income accounting; theories of income, employment, and price level. Counter-cyclical and other public-policy measures.

Preparation for Course

P: ECON E202; junior class standing.

Cr. 3.

Note

Programs can be designed to provide concentrations in several areas. A theory and quantitative concentration of 18 credits, including at least 9 resident credits, can be provided along with suitable study in mathematics to prepare students for graduate programs in economics and related disciplines.

Total Credits: 15

Electronics Minor

Program: Minor

Department of Computer and Electrical Engineering Technology and Information Systems

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 205 ~ 260-481-6338 ~ www.ecet.ipfw.edu

The minor in electronics provides a fundamental technical background in analog and digital electronics to enable you to understand, analyze, and troubleshoot basic circuits. It also enables you to specialize and gain an in-depth knowledge of a particular area of electronics.

The ECET department also offers the Bachelor and Associate of Science with a major in electrical engineering technology, a Bachelor of Science with a major in computer engineering technology (CPET) and an Associate and Bachelor of Science with a major in information systems. In addition to the degrees, the department offers a minor in information systems and certificate programs in computer-controlled systems, electronic communications, power electronics systems, and computer networking.

To earn a minor in electronics, you must complete the following courses and, unless you have already completed them, the 6 credits of mathematics prerequisites:

Fundamental Courses (12 credits)

ECET 107 - Introduction to Circuit Analysis

Voltage, current, resistance, Ohm's law, Kirchhoff's current and voltage law, resistance combinations, and Thevenin's, Norton's, and superposition theorems are studied and applied. DC and AC circuits are studied and utilized with basic AC terminology described. Ideal RC coupling and filter circuits and RC switching circuits are introduced. Fundamental analog circuits with ideal or near-ideal electronic devices are utilized in the lecture and laboratory to enhance the understanding of basic circuit laws and theorems.

Preparation for Course

C: MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 111 - Digital Circuits

A study of switching circuits, waveshaping, logic gates, arithmetic codes, Boolean algebra, mapping and other simplification techniques. Discrete devices and small-scale (SSI) and medium-scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 157 - Electronics Circuit Analysis

Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT & MOSFET based small signal amplifiers, waveform generation, and programmable analog devices are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design of circuits. Computer simulation is used.

Preparation for Course

P: ECET 107, MA 153.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Advanced Courses (8 credits in one of the three options)

Controls

ECET 302 - Introduction to Control Systems

This first course in industrial controls is applications oriented and includes on-off type open- and closed-loop control systems, and analog based systems. Major topics include relay and programmable controller based systems.

Preparation for Course

P: ECET 157, MA 154.

Cr. 4.

Hours

Class 3, Lab. 2.

ECET 361 - Introduction to PLC and Pneumatic Systems

A study of the fundamentals of developing and implementing ladder logic diagrams for machine controls using industrial programmable logic controllers. The applications of hydraulic and pneumatic systems are also studied.

Preparation for Course

P: ECET157 or 204 or 211.

Cr. 4.

Hours

Class 3, Lab. 2-3.

Microprocessors

ECET 205 - Introduction to Microprocessors

An introduction to microprocessor and microcontroller hardware and software. Assembly language instructions and programming, troubleshooting, and input/output techniques are studied. Computer-based program editing and assembly techniques are used.

Preparation for Course

P: ECET 111 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3.

ECET 305 - Advanced Microprocessors

A course emphasizing applications of microcomputers to dedicated hardware functions. A high-level language is used with emphasis on programming handheld computers. Some coverage of microprocessor architecture and troubleshooting is included.

Preparation for Course

P: 205 or equivalent, and 264 or equivalent.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Communications

ECET 303 - Communications I

A study of analog communications that includes transmission lines and propagation, signal spectra, elements of noise, RF amplifiers, oscillators, AM and FM systems, phase modulation, transmitter and receiver circuits. PSPICE and electronic workbench are incorporated in the course.

Preparation for Course

P: 204, MA 227 or consent of instructor.

Cr. 4.

Hours

Class 3, Lab. 2-3,

ECET 355 - Data Communications and Networking

A survey of data communication and networking techniques, protocols, and standards. Topics include OSI mode, TCP/IP protocols and applications, signals, encoding and modulating, transmission of data and interfaces, transmission media, multiplexing, error detection and correction, data link controls and protocols, switching techniques, local area

networks, wide area networks, and other well-known networks services including integrated services digital network (ISDN), X.25 (packet switching), frame relay (virtual-circuit), asynchronous transfer mode (ATM), and synchronous optical network (SONET)

Preparation for Course

P: ECET 205 or CS 271.

Cr. 4.

Hours

Class 3, Lab. 2-3,

Total Credits: 20

English Minor

Program: Minor

Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

This program is available to all IPFW students who are not pursuing a major in English. You may earn a minor in English by completing the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Credits in American literature Credits: 3
- Credits in British literature before 1700 Credits: 3
- Credits in British literature after 1700 Credits: 3
- Additional credits in ENG and LING courses, W100–W299 excepted Credits: 6

Total Credits: 15

Film and Media Studies Minor

Program: Minor

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

The minor in film and media studies provides a coherent introduction to the basics of film/media literacy. The program is designed to develop a critical understanding of the historical, theoretical, aesthetic, cultural and institutional contexts of film, television, and other electronic and digital mass media.

Film/media aesthetics Credits: 3

One of following:

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

Film/media history Credits: 3

One of following:

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

FILM K201 - Survey of Film History

An overview of film history from its beginnings to the present, emphasizing major developments in narrative cinema.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Hours

Class 2-3, Lab. 0-1.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

Upper-level requirements Credits: 6

Two of the following:

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

FILM K302 - Genre Study in Film

Topic varies: the evaluation of typical genres; problems of generic description or definition; themes, conventions, and iconography peculiar to given genres, etc. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Variable Title

(V.T.)

FILM K390 - The Film and Society

Film and politics; censorship; social influences of the cinema; rise of the film industry. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

R: ENG L202 or W233 or equivalent.

Cr. 3.

Hours

Class 2-4, Lab. 0-4.

Variable Title

(V.T.)

Free elective Credits: 3

One of following:

COM 422 - Women, Men, and Media

An examination of the processes by which gender is constructed in the mass communication media. Students will be asked to consider how the technical, economic, and political constraints and capabilities of the media construct images of gender for audiences.

Preparation for Course

P: 250 or permission of instructor.

Cr. 3.

COM 436 - Script Writing

Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

COM 491 - Special Topics in Communication

Intensive study of selected topics, varying from semester to semester, from the literature or practice of communication. Course content will be drawn from areas not dealt with in the regular curriculum and may include such topics as photojournalism, economic reporting, and campaign communication.

Preparation for Course

P: consent of instructor.

Cr. 1-3.

Variable Title

(V.T.)

Notes

May be repeated for up to 6 hours of credit.
(with appropriate topic)

FREN F460 - French Fiction in Film

Involves reading the works of French fiction and studying them as works of literature, followed by the viewing of a film version of each work and the preparation of a comparative analysis of the two versions.

Preparation for Course

P: FREN F305 and F306.

Cr. 3

Dual Level Course

Eligible for graduate credit.

POLS Y200 - Contemporary Political Topics

Extensive analysis of selected contemporary political problems. Topics vary from semester to semester and are listed in the Schedule of Classes. May be repeated for credit with a different topic.

Cr. 1-6,

Hours

Lab. 0-3.

Variable Title

(V.T.)

(with appropriate topic)

Note

Additional courses may be approved and will be announced in the program brochure and in the Schedule of Classes each semester. At least 8 credits must be completed as resident credit at IPFW.

Total Credits: 15

Fine Arts Minor

Program: Minor

Department of Visual Arts/Fine Arts Program

College of Visual and Performing Arts

Visual Arts Building 117 ~ 260-481-6705 ~ www.ipfw.edu/vpa/finearts

A Fine Arts Minor is designed for IPFW students outside of Department of Fine Arts programs. IPFW students can earn a minor in art by completing 15 credit hours within the Department of Fine Arts while maintaining a 2.0 GPA within the classes.

Resident Requirements Completion of at least six resident credits at the 200 level or above is required for the minor.

Required Courses Credits: 6

FINA P121 - Drawing Fundamentals I-II

The fundamentals of representation are taught through the drawing of simple objects, forms, and volumes in line, tone, and texture using simple tools and free-hand drawing skills with a variety of media; emphasis on sound understanding of values, proportion, and perspective.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

FINA P151 - Design Fundamentals I-II

In Design Fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive, and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

Additional Fine Arts Credits: 9

Select three additional classes within the fine arts program.

- At least two classes must be at the 200 level or above.
- Two FINA art history classes can be used as part of the additional classes

Total Credits: 15

Folklore Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

The minor in folklore familiarizes you with the international body of folklore as well as the theories, techniques, and history of folkloristics. The folklore minor is particularly appropriate for degree programs in anthropology, education, English, history, sociology, and other humanities and social sciences.

This program is available to all IPFW students except those pursuing the teacher-certification concentration with a major in English.

To earn a minor in folklore, you must complete the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Credits in additional courses, including at least two courses above the 200 level in folklore or in folklore-related courses in anthropology, classics, or other disciplines approved by the department Credits: 9

One of following Credits: 3

FOLK F101 - Introduction to Folklore

A view of the main forms and varieties of folklore and folk expression in tales, ballads, myths, legends, beliefs, games, proverbs, riddles, and traditional arts. The role of folklore in the life of mankind.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

FOLK F220 - Introduction to American Folklore

The folk cultures of the United States. The art and traditional philosophies of Indians, European-Americans, Afro-Americans, and occupational groups. The adaptation and interrelation of distinct American cultures.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

One of following Credits: 3

ANTH E462 - Anthropological Folklore

Function, forms, and interpretations of folklore in traditional societies. Folklore as an expression of continuity and change.

Preparation for Course

P: ANTH E105.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non- Western Culture) requirement.

FOLK F251 - Folklore Methods and Theories

Basic theoretical approaches to the study of folklore. Relation of folklore to other academic disciplines. History of folklore scholarship. Classification of folklore genres and their function in society. Methods of collecting, analyzing, and indexing traditional materials.

Preparation for Course

P: FOLK F101 or F220.

Cr. 3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any folklore or classics course.

Total Credits: 15

French Minor

Program: Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

If you are pursuing a major other than French, you may earn a minor in French by completing the following 14 credits, with a grade of C or better in each course.

Study Abroad Both majors and nonmajors are encouraged to study abroad. For those who wish to study French, Indiana University administers and cosponsors an academic-year program in Aix-en-Provence; semester programs in Paris, Rennes, and Rouen; and summer programs in Paris and Quebec.

Program Requirements

- Credits in 300-level French language courses Credits: 6
- Credits in 300-level French literature courses Credits: 6

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

Total Credits: 14

French Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs

If you are already licensed or qualified to be licensed in another area, you may earn a French teaching minor by completing the following 34 credits with a grade of C or better in each course.

Program Requirements

- Credits in 300-level French language courses Credits: 3
- Credits in 300-level French literature courses Credits: 3
- Credits in 400-level French and francophone civilization courses (F463 or F464) Credits: 3

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

(normally taken concurrently with F203–F204)

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

3 Credits

Total Credits: 34

Geology Minor

Program: Minor

Department of Geosciences

College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

If you are pursuing a major other than geology, you may earn a minor in geology by completing the following courses with a grade of C or better, with at least 11 resident credits taken at IPFW.

Program Requirements

Two courses from GEOL/GEOG, 200 level or higher Credits: 6

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3-4

- GEOL G100/L100 General Geology with Lab Cr. 4.
- GEOL G103 - Earth Science: Materials and Processes Cr. 3.

One of following Credits: 3

- GEOG G237 - Cartography and Geographic Information Cr. 3.
- GEOL G323 - Structural Geology Cr. 3.

One of following Credits: 3

- GEOL G300 - Environmental and Urban Geology Cr. 3.
- GEOL G334 - Principles of Sedimentology and Stratigraphy Cr. 3.

Total Credits: 21-22

German Minor

Program: Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are pursuing a major other than German, you may earn a German minor by completing the following 15 credits, with a grade of C or better in each course:

Study Abroad both majors and nonmajors are encouraged to study abroad. For those who wish to study German, Indiana University administers and cosponsors an academic-year program in Freiburg, a semester program in Freiburg, and a summer program in Graz (Austria).

Program Requirements

- Additional German credits at the 300–400 level Credits: 9

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Total Credits: 15

German Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are already licensed or qualified to be licensed in another area, you may earn a German teaching minor by completing the following 32 credits with a grade of C or better in each course.

Program Requirements

- Additional German credits at the 300-400 level Credits: 9

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

Credits: 3

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

One of following Credits: 3

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Total Credits: 32

History Minor

Program: Minor

Department of History

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

If you are pursuing a major other than history, you may earn a minor in history by completing the following credits with a grade of C or better in each course, including at least 9 credits as resident credit at IPFW:

Program Requirements

- Credits in 100-level courses (H105, H106, H113, H114, or equivalent honors courses) Credits: 9
- Credits above the 100 level, including courses in at least two of the following three areas: United States, Western Europe, and Other World areas Credits: 9

Total Credits: 18

Note

Included in the above credits must be at least one course dealing primarily with the period before 1800 (HIST A301, A302, A310, B351, B352, C388, C390, C393, E331, F341, H113, H201, H222, and occasional special offerings). HIST H232 may not be used to fulfill the Western European or Other World area requirements, but may be used for additional credits toward the major or minor.

Human Services Minor

Program: Minor

Department of Human Services

College of Health and Human Services

Neff Hall 130 ~ 260-481-6424 ~ www.ipfw.edu/hs/

The minor in human services is available to students enrolled in baccalaureate programs other than the Bachelor of Science in human services. The minor can enhance the career opportunities for liberal arts, general studies, and other majors. The minor requires 15 credit hours of specified courses, which must be completed with a grade of C or better. Students should contact the Department of Human Services at 260-481-6424 for more information and to be assigned to an academic advisor.

Program Requirements

HSRV 100 - Introduction to Human Services

An orientation to human services. History, current concepts, ethics, and roles of the various workers in the field are discussed. This course is open to non-HSRV majors.

Cr. 3.

HSRV 315 - Introduction to Theories and Therapies

Discusses specific theories and therapies that are essential for human service professional practice. This course also provides knowledge that is required to pass the Indiana certification examination for addiction counselors.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 320 - Case Methods

This course will provide theoretical knowledge of techniques in case management related to human service clients and agencies. Case management with a wide range of populations will be discussed.

Preparation for Course

P: 100, 105.

Cr. 3.

One of the following: Credits: 3

HSRV 325 - Current Trends in Psychosocial Rehabilitation

Current models of psychiatric rehabilitation emphasize community integration and support for persons with serious mental illnesses and developmental disorders. This course examines historical attitudes toward those classified with these disorders; current theoretical perspectives; physiological evidence of a disease process; and research into the various intervention models for psychopharmacological, social-environmental, and individual treatment. One semester of Abnormal Psychology is strongly recommended, but not required, prior to taking this course.

Preparation for Course

P: PSY 120.

Cr. 3.

HSRV 350 - Drugs and Society

Emphasizes the social, psychological, biological, and cultural contexts in which addiction develops and occurs. Encourages an understanding of substance use, abuse, and addictive behaviors within a larger pattern. For this reason, the course is applicable to anyone who will be in a position in which they must a) work with people on a daily basis, b) provide supervision or support services within an organization, or c) work in any aspect of the helping professions.

Cr. 3.

HSRV 399 - Special Topics

Hours, credits, and subject matter to be arranged by department. See department for current course selection.

Cr. 1-3.

Variable Title

(V.T.)

HSRV 420 - Substance Abuse Prevention

Provides an overview of substance abuse theory, practice, and prevention. Includes concepts related to substance abuse prevention in the educational setting.

Cr. 3.

One of the following: Credits: 3

HSRV 103 - Helping Relationship Techniques

This course will provide students with opportunities to increase their effectiveness in helping people. This course will examine the helping process in terms of skills, helping relationship. This course is appropriate for anyone who is entering a career dealing with people. This course is open to non-HSRV majors.

Cr. 3.

HSRV 105 - Basic Interviewing Skills

This course is designed to introduce and develop skills associated with interviewing clients. The focus will be on skill-building and competencies in attending behaviors, client observation skills, open and closed questions, encourager skills, paraphrasing and summarizing, and reflection of feelings and meaning. Advanced interviewing skills will include confrontation, probes, focusing, and information giving. This course is open to non-HSRV majors.

Cr. 3.

HSRV 211 - The Dynamics of Group Behavior

This course is appropriate for anyone who will be working with groups. Focus is upon the properties of groups, awareness of personal factors in group interaction, dimensions of leadership behavior in achieving group effectiveness, characteristics of larger social systems, and the dynamics of change. Small-group experiences are supplemented by skill practice sessions and theory presentations. This course is open to non-HSRV majors.

Cr. 3.

Informatics Minor

Program: Minor

Department of Computer Science

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 125 ~ 260-481-6803 ~ www.cs.ipfw.edu

The minor in Informatics complements a major in such fields as Nursing, Biology, Business, management, government/Public Administration and Education. To earn a minor in Informatics, you should have completed ETCS 106 (or equivalent) with a grade of C or better and the following must be completed:

Program Requirements

Informatics Core Courses

IM 105 - Introduction to Informatics

This is a required foundation course for all students interested in the study of informatics leading to the fulfillment of requirements in the minor or certificate programs. The course will cover key topics relating to ethics and social issues regarding informatics. The course will provide applications and discipline-specific examples involving all of the current converging technologies utilized in informatics. The material presented will explore the interdisciplinary nature of informatics. This course will provide the program plan of study and describe various courses so the student can make the decisions necessary for elective options as well as the semesters in which courses will be taken.

Preparation for Course

P: CS 106 or equivalent.

Cr. 1.

IM 210 - Problem Solving and Programming for Informatics

An introduction to computer programming and problem solving at the level needed for the study of informatics. Programming topics include data representation, expressions, control statements, subprograms, simple input/output, GUI development basics, and event-driven programming. Problem-solving techniques include problem specification, pseudo-code, and stepwise refinement.

Preparation for Course

P: MA 153, CS 106,3 or equivalent and IM 105.

Cr. 4.

IM 220 - Database Applications for Informatics

Theory and application of database systems from the viewpoint of informatics. Topics include data analysis and design, data storage, data querying, and data visualization. A special emphasis will be on developing Web applications that allow for information gathering and graphical representation of information through the deployment of database technology.

Preparation for Course

P: IM 210.

Cr. 3.

IM 230 - Informatics Infrastructure

This course focuses on the fundamental informatics technologies and their use in the company, business, or organization. Topics include design and development of Web and other applications, computer operating systems, distributed systems, data applications, data information analysis, e-commerce, multimedia technology, social implication of informatics, current and emerging technologies.

Preparation for Course

P: IM 210.

Cr. 3.

IM 330 - Information Retrieval and Presentation

An introduction to the basic concepts and techniques in information retrieval and visualization. Topics include information organization, access, and visualization, Web-based information retrieval, searching, and graphical presentations and interfaces. Students will study existing information retrieval and visualization systems.

Preparation for Course

P: IM 210.

Cr. 3.

Informatics Elective selected from the following (one course, Cr. 3):

IM 310 - Problem Solving and Programming for Informatics

A continuation of IM 210 for students interested in a deeper understanding of program development. New topics include arrays, file I/O, fundamentals of object-oriented programming, and development of user-defined classes, advanced GUI programming, graphics, and presentation of visual data. Reinforcement of problem-solving techniques.

Preparation for Course

P: IM 210.

Cr. 1.

IM 370 - Network Design and Management for Informatics

The design, implementation, and management of computer networks for informatics. Topics include telecommunication concepts, client-server environments, Internet and intranet, wireless systems, network devices, network operating systems, network design, implementation and management, and network security. Students are expected to design and implement small networks.

Preparation for Course

P: IM 230.

Cr. 3.

IM 380 - HCI Design for Informatics

A survey of human-computer interaction concepts, methods, and evaluation. Topics include HCI design issues, Web design, user interface design and techniques, multimedia, and simulated environments. Students are expected to design, implement, and evaluate user interface designs in small projects.

Preparation for Course

P: IM 330.

Cr. 3.

(Other approved Informatics courses from a related discipline)

Informatics Capstone Course, Cr. 3

IM 450 - Informatics Design Project

This course will incorporate a discipline-oriented project. The student will be involved in a project from the planning through the end product. Parts of the project will include the data design, gathering, manipulating, and analysis. The project will also consider Web interface and network considerations. Final graphics and visualization presentations (including multimedia if needed) will be the end product. Students will work in teams.

Preparation for Course

P: IM 310 or 370 or 380.

Cr. 3.

(Other approved Informatics capstone course from a related discipline)

Information Systems Minor

Program: Minor

**Department of Computer and Electrical Engineering Technology & Information
Systems and Technology**

College of Engineering, Technology, and Computer Science

The Minor in Information systems provides a fundamental background for students interested in developing software for business/organization systems and applications. The minor involves two programming languages most used in businesses/organizations and a beginning understanding of networking as well as strong coverage systems analysis techniques.

To earn a minor in information systems, you must complete the following courses:

Major Requirements

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

CS 161 - Introduction to Computer Science II

This course continues CS 160. Students will design larger programs to solve more complicated problems. The emphasis is on deepening students' abilities to deal with abstraction, problem decomposition, and the interaction between program components. Students will develop their professional practice through analysis of more general problems, debugging and testing of their programs, and written presentation of their solutions. Topics include multidimensional arrays, event-driven programs, GUI's, class inheritance and interfaces, and libraries.

Preparation for Course

P: CS 160; C: MA 175.

Cr. 4.

CS 260 - Data Structures

This course is an introduction to the common data structures (ADT's) of computer science and the algorithms which maintain and operate on them. These include arrays, stacks, queues, linked lists, trees, graphs, and more general structures like maps and dictionaries. The relevant algorithms include additions, deletions, sorts, searches, traversals, and others appropriate to the structure. The course includes an introduction to the prediction and testing of algorithm performance.

Preparation for Course

P: CS 161 and MA 175.

Cr. 3.

CS 274 - Data Communications

A survey of data communication techniques. Topics include communications media, synchronous and asynchronous transmission, coding, error detection and correction, communications protocols and formats, modulation and demodulation, multiplexing and networking, and the OSI model with emphasis on the physical and data link layers.

Preparation for Course

P: CS 260.

Cr. 3.

CS 366 - Structured Analysis Techniques

Methods used in analyzing information systems. Topics include user interviewing and observation, event analysis, data flow diagrams, data dictionaries, minispecifications, decision trees, decision tables, and both logical and physical models. Students practice these techniques in a major structured analysis project resulting in a requirements specification document.

Preparation for Course

P: ENG W234 and CS 260.

Cr. 3.

One of the following Credits: 3

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 203 - Advanced Visual Basic

This course continues the study of Visual Basic begun in CS 114/ ECET 114. Topics to be covered include reading and writing of sequential and direct files; custom controls; advanced SQL; the creation of online help; object linking and embedding (OLE); calling DLL procedures (Windows API); class modules; and an introduction to ActiveX components. Student will learn the skills needed to create stand-alone and www-based Visual Basic applications for personal computer use. This course will provide guidance in preparing for the Microsoft Certified Systems Designer examination.

Preparation for Course

P: CS 114 or ECET 114.

Cr. 3.

Total Credits: 20

Journalism Minor

Program: Minor

College of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

The IPFW Journalism Program offers two minors. A journalism minor provides underpinning for those interested in various media; the public relations minor described later in this section is more particularly defined and will appeal to those wishing to concentrate in corporate communications or advertising/public relations.

These minors are especially appropriate for media and public communication or English communication media majors. Those with a desire to write or report in some content area should consider a major in the area itself. Reporters need a content area such as political science or history; basic science students will discover that science writing is an especially valuable and challenging career goal.

Program Requirements

To earn the journalism minor, you must complete each course with a grade of C or better and must complete at least 8 credits as resident credit at IPFW.

One of following Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Two of the following Credits: 6

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J201 - Reporting, Writing, and Editing II

Working seminar focused on the strengthening of basic journalism skills, including in-depth reporting, editing, and multimedia presentations. Creativity, cooperation, and critical thinking are used to shape effective messages for diverse audiences.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J315 - Feature Writing

The course aims to develop skill in gathering and presenting feature story material, exploring the realm between straight news and editorials. It follows feature-story practice in combining information with entertainment stressing the imperative of research, accuracy, and mechanical correctness.

Preparation for Course

P: JOUR J200.

Cr. 3.

Two of the following Credits: 6

COM 334 - Journalism for the Electronic Mass Media

The development and practice of electronic journalism, with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J390 - Corporate Publications

This course focuses on the practical and specialized concerns of editing and designing newsletters, tabloids, magazines, and newspapers for business, industry, institutions, or other organizations. Attention is given to audience surveys, readability, copy editing, headlines, photographs, cutlines, copyfitting, and printing instruction, with special emphasis on design techniques for the four major types of organizational publications. Includes practice in all facets of publication design. Recommended for persons interested in print communications programs or in developing limited circulation publications. Limited enrollment; consent of instructor required.

Cr. 1-3.

Variable Title

(V.T.)

One of following Credits: 3

COM 432 - Practicum in Television

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional television media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 332, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

JOUR J492 - Media Internship

Must have permission to enroll. Supervised professional experience in communications media. Does not contribute to 27 credit hours of required course work in journalism major but will count toward 33 credit hours maximum allowed in journalism and telecommunications. May be repeated, but student may take no more than 3 hours of internship credit for the B.A. either through the Journalism Program or any other academic unit.

Cr. 1-3.

Total Credits: 18

Labor Studies Minor**Division of Labor Studies****Program Offered: Minor**

Kettler Hall G28 ~ 260-481-6831 ~ www.labor.iu.edu

If you are pursuing a major other than labor studies, you may earn a minor in labor studies by completing 15 credits, including 6 credits from the Labor Studies Core and 9 additional credits in labor studies. The additional 9 credits may come from other core courses, more-advanced courses, topics courses, internships, and directed labor studies.

Linguistics Minor

Program: Minor

Department of English and Linguistics

College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

Linguistics is the study of the characteristics of language. Accordingly, linguistics courses are valuable preparation for the study of such subjects as anthropology, communication, education, English, international languages, psychology, sociology, and speech and audiology.

This program is available to all IPFW students except those pursuing the language, teacher-certification, or communication media concentration with a major in English.

To earn a minor in linguistics, you must complete the following 15 credits, including at least 8 credits earned as resident credit at IPFW, with a grade of C or better in each course:

Program Requirements

- Any LING course numbered 300 or above except LING L303 Credits: 3

One of the following Credits: 3

ANTH L200 - Language and Culture

An introduction to the study of language and its relations to the rest of culture.

Cr. 3.

ANTH L400 - Seminar in the Ethnography of Communication

Current issues in linguistic anthropology, designed to acquaint the student with readings and points of view not covered in the introductory courses. Topics such as (1) languages of the world, (2) variation in language, (3) problems in linguistic structure, and (4) culture and communication.

Cr. 3.

Variable Title

(V.T.)

Notes

May be repeated once for credit with a different topic.

LING L360 - Language in Society

A general introduction to sociolinguistics, for the nonspecialist. Topics covered include regional and social dialects, the politics of language use in social interaction, language and social change, and men's and women's language, as well as issues in applied sociolinguistics such as bilingualism and black English in education.

Preparation for Course

P: L103 or L303.

Cr. 3.

One of the following Credits: 3

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

LING L303 - Introduction to Linguistic Analysis

Introduction to basic concepts of linguistic analysis, exemplifying the general principles of structural approaches to the study of language. Application of analytical methods to problems in phonology, syntax, and semantics.

Preparation for Course

P: L103.

Cr. 3.

One of the following Credits: 3

Or, one course in the structure or linguistics of an international language.

AUS 181 - First Course in American Sign Language

Basic manual communication skill including the American manual alphabet, approximately 550 basic signs, and the history and place of manual communication in society. Designed to give the students minimum vocabulary and skills in communicating with individuals who are dependent on this form of communication.

Cr. 3.

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L490 - Linguistic Structures

The linguistic analysis of particular aspects of the structure of one language or a group of closely related languages. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: consent of instructor.

Cr. 3.

Variable Title

(V.T.)

One of the following Credits: 3

Or one course above the 200 level in linguistics or a related discipline approved by the department.

AUS 306 - Introduction to Phonetics

An introduction to articulatory phonetics, speech sounds in languages of the world, and principles and symbols of the International Phonetic Alphabet. Extensive practice in phonetic transcription.

Cr. 3.

Hours

Class 3.

AUS 309 - Language Development

Specific nature, sequence, and pattern of oral language development from birth through adolescence. Nature of language acquisition and approaches to the study of children's language are presented. Linguistic and psychological explanations of the sequence of development are discussed.

Cr. 3.

PHIL 450 - Symbolic Logic

Topics considered include advanced techniques of the logic of quantification, identity, and definite description, intuitive set theory, Russell's paradox, and modal logic.

Preparation for Course

P: 150 or consent of instructor.

Cr. 3.

PSY 426 - Language Development

Linguistic descriptions, successive stages, and psychological explanations of typical patterns of oral language development.

Preparation for Course

P: PSY 235 or PSY 369.

Cr. 3.

PSY 526 - Psycholinguistics

An introduction to the descriptive devices, central issues, and varying methodologies of psycholinguistics.

Preparation for Course

P: PSY 235 or PSY 350.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 15

Math and Physics Minor - Computer Engineering

Program: B.S.Cmp.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Computer engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Computer engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the computer engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math and Physics Minor - Electrical Engineering

Program: B.S.E.E.**Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Electrical engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Electrical engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the electrical engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math and Physics Minor - Mechanical Engineering**Program: B.S.M.E.****Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Mechanical engineering students that take ME 373 Numerical Methods in Engineering, have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Mechanical engineering students that take PHYS 322 and PHYS 342, which are accepted as technical electives in the mechanical engineering program, will earn a minor in physics. PHYS 342 can also be taken as an Area VI General Education course. To be officially awarded a minor in physics, a form must be filled and approved by the physics department prior to graduation.

Math Minor - Civil Engineering**Program: B.S.C.E.****Department of Engineering****College of Engineering, Technology, and Computer Science**

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

Civil engineering students have enough math courses to qualify for a minor in mathematics. No additional math courses are needed. To be officially awarded a minor in math, a form must be filled and approved by the math department prior to graduation.

Mathematics Minor

Program Offered: Minor
Department of Mathematical Sciences
College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

You may earn a minor in mathematics by completing at least six courses in mathematics and statistics. Your selection of courses should be appropriate for your major, and your program for a minor must be approved by the department's program review committee. Two calculus courses must be included. College algebra or trigonometry courses are excluded; one computer science course may be substituted for a mathematics or statistics course. You must have a grade of C or better in all courses included in your minor, and at least half of the credits must be earned as resident credit at IPFW.

Sample Programs for a Minor in Mathematics

Business and Management Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite or Discrete Math:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Computer Science Majors

Numerical Analysis:

CS 384 - Numerical Analysis

Iterative methods for solving nonlinear equations; direct and iterative methods for solving linear systems; interpolation and extrapolation; approximation of derivatives, integrals, and functions; numerical techniques for ordinary differential equations; error analysis. Use of mathematical subroutine libraries.

Preparation for Course

P: CS160 and MA 166.

Cr. 3.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

Discrete Mathematics:

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Linear Algebra:

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Statistics:

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

or

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Liberal Arts Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite Mathematics:

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

STAT 125 - Communicating with Statistics

An introduction to the basic concepts and methods in statistical reasoning that are commonly referenced in the print media. Topics include data collection methods, descriptive statistics, basic techniques of estimation, and theory testing. Students will analyze and interpret statistics relating to contemporary problems in politics, business, science and social issues.

Preparation for Course

P: MA 109 with a grade of C or higher.

Cr. 3.

Life Sciences Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Finite Mathematics:

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Modeling:

MA 314 - Introduction to Mathematical Modeling

This course is intended to be accessible to students outside the mathematical and physical sciences. Formulation of mathematical models for applications in the biological, physical, and social sciences. Discrete and continuous models employing random and nonrandom simulation will be studied, with projects selected to fit the background and interests of the students.

Preparation for Course

P: One semester of calculus, and MA 175 or MA 275 with a grade of C- or better.

Cr. 3.

Statistics:

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Physical Sciences and Engineering Majors

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
and

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Differential Equations:

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Advanced Calculus:

MA 510 - Vector Calculus

Calculus of functions of several variables and of vector fields in orthogonal coordinate systems; optimization problems; the implicit function theorem; Green's, Stokes', and the Divergence theorems; applications to engineering and the

physical sciences.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Complex Analysis or Linear Algebra:

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

or

MA 511 - Linear Algebra with Applications

Real and complex vector spaces; linear transformations; Gram- Schmidt process and projections; least squares; QR and LU factorization; diagonalization, real and complex spectral theorem; Schur triangular form; Jordan canonical form; quadratic forms.

Preparation for Course

P: MA 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

or

MA 525 - Introduction to Complex Analysis

Complex numbers and complex-valued functions of one variable; differentiation and contour integration; Cauchy's theorem; Taylor and Laurent series; residues; conformal mapping; applications.

Preparation for Course

P: MA 263, 441 or 510.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

Technology Majors

Computer Programming:

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

or

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

Calculus:

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

and

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.
or

MA 227 - Calculus for Technology I

Functions, derivatives, integrals. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

and

MA 228 - Calculus for Technology II

Continuation of 227. Further topics in differentiation and integration. Introduction to infinite series, harmonic analysis, differential equations, and Laplace transforms. Applications to problems in the engineering technologies.

Preparation for Course

P: MA 227 with a grade of C- or better.

Cr. 3.

Discrete or Finite Math:**MA 175 - Introductory Discrete Mathematics**

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

or

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
or

MA 275 - Intermediate Discrete Math

Formal logic, proof techniques, elementary number theory, mathematical induction, functions, recurrence relations, sets, combinatorics, elementary graph theory, and applications. Students may not count both MA 175 and MA 275 toward graduation.

Preparation for Course

P: MA 261 or 263.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Mathematics Elective:

MA 321 - Applied Differential Equations

Designed primarily for EET majors. Ordinary differential equations with emphasis on linear equations and their applications. Laplace transforms. Fourier series, and an introduction to partial differential equations and their applications. No credit for math majors.

Preparation for Course

P: MA 228 with a grade of C- or better.

Cr. 3.

or

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

Statistics:

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

or

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Media Production Minor

Program: Minor

Department of Communication

College of Arts and Sciences

Neff Hall 230 ~ 260-481-6825 ~ www.ipfw.edu/comm/

This program is available to all IPFW students, including students with communication majors. To earn a minor in media production, you must complete at least 18 credits with a grade of C or better. You must also complete any prerequisites for the courses that are chosen and complete at least 9 credits as resident credit at IPFW.

Program Requirements

COM 248 - Introduction to Media Criticism and Analysis

Introduction to major critical approaches of media studies. Includes standard terminology of media analysis used to discuss form and technique of film, video, and audio productions. Instructor may require additional screening times outside scheduled class meeting times. No credit for both COM 248 and COM 251.

Cr. 3.

Credits from among the following: Credits: 15

COM 331 - Audio Production

Basic principles of audio production as applied to radio and television. Treats program types, production methods, techniques of the sound studio, and laboratory practice in production and direction.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1-2, Lab. 4.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 333 - Film Production

Basic theory and techniques of motion-picture production. Viewing and evaluation of films illustrating a variety of film techniques. Production experiences in filming, scripting, editing, sound recording, and production planning.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

COM 334 - Journalism for the Electronic Mass Media

The development and practice of electronic journalism, with projects relating to straight news, feature reports, commentary, editorial, interview, and documentary.

Preparation for Course

P: COM 248 or 251, COM 332 and consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2.

COM 337 - Advanced Digital Video Production

Provides experience in writing program proposals and scripts, taping with small-format television equipment, and audio and video editing for various program formats. Special attention to editing, theory and technique, aesthetic considerations, and institutional and community cable outlets.

Preparation for Course

P: COM 248 or 251, and COM 332.

Cr. 3.

Hours

Class 1, Lab. 4.

COM 338 - Documentary or Experimental Film and Video

An examination of experimental and actuality ("documentary") film and video, with emphasis on structural and technical innovation, production considerations, and historical developments. May be repeated with a different title for a maximum of 6 credits. Additional screening times will be required.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Variable Title

V.T.

COM 431 - Practicum in Radio

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional radio media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 331, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

(2 credits, may be repeated once)

COM 432 - Practicum in Television

Assigned television production for the advanced student only; usually, but not necessarily, involving assigned work at a professional television media installation.

Preparation for Course

P: COM 114, 250 or 330, 248 or 251, 332, and permission of the instructor.

Cr. 2.

Notes

May be repeated once for credit.

(2 credits, may be repeated once)

COM 436 - Script Writing

Study of forms and materials suitable for the electronic mass media; practice in selection, adaptation, and organization of program materials.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

COM 537 - Educational/Instructional Television

Survey of the educational and instructional applications of multimedia technology; analysis of selected problems in the educational uses of the multimedia, development, application, and analysis of multimedia projects as related to the learning process.

Preparation for Course

P: consent of instructor.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

FILM K101 - Introduction to Film

Nature of film technique and film language, analysis of specific films, major historical, theoretical, and critical developments in film and film study from the beginnings of cinema to the present.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Hours

Class 2-4, Lab. 0-3.

Notes

If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any film studies course.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

PHYS 105 - Sound and Music

A nonmathematical course that deals with the physical properties of sound and sound patterns, the physiological response to sound, and the psychological sensations of music. The physical principles covered include wave motion, wave properties, resonance, and analysis of tones and complex waveforms. How sound patterns are produced using musical instruments, how these sounds propagate and how they are detected and interpreted will be examined.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 125 - Light and Color

This course is an introduction to the phenomena associated with electromagnetic waves having visible wavelength, i.e., light. Topics will include characteristics of light, optical instruments such as telescopes and cameras, rainbows, human seeing, color and color mixing, lasers, Polaroid lenses, and tricks with mirrors. The course will emphasize phenomenological and conceptual consideration of these topics using many demonstrations and activities. This course is intended for non-science majors.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

THTR 158 - Stagecraft

Theory and application of current and traditional technical theatre practices. Training in stage carpentry, painting, and preproduction organization.

Cr. 3.

Hours

Class 3, Lab. 2.

VCD N274 - Digital Imaging

A course designed for non-art majors. Students will learn to apply basic art and design fundamentals to the personal computer. Areas such as page layout and illustration will be covered in assigned problems.

Cr. 3.

Hours

Class 3, Studio 3,

VCD P151 - Design Fundamentals I

In design fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(fall)

VCD P152 - Design Fundamentals II

In design fundamentals, the student becomes familiar with the vocabulary and elements of the visual language. Also, the expressive powers of the elements of line, shape, texture, space, and color are explored through a series of sequential exercises. Many different problems in building visual units provide the training artists need to make individual, yet clear, expressive and complete statements.

Cr. 3.

Hours

Studio 3,

Session Indicators

(spring)

Total Credits: 18

Music Minor

Program: Minor

Department of Music

College of Visual and Performing Arts

Rhinehart Music Center (RC) 144 ~ 260-481-6714 ~ www.ipfw.edu/vpa/music

A minor in music is designed for students who wish to enhance an interest in music while majoring in another area. To earn this minor, you must complete the courses listed below and earn a grade of C or better in each. Six credits must be at the 200 level or higher.

Program Requirements

24 credit hours selected from the following:

Music Theory Credits: 8

MUS T113 - Music Theory I

Required for all music majors. Study of the elements of basic musicianship; intervals, scales, triads, rhythm and meter, music nomenclature, rudiments of two-part writing and diatonic harmony.

Preparation for Course

P: T109 with a B or better or placement examination.

Cr. 3.

MUS T114 - Music Theory II

Required for all music majors. Continuation of the study of harmony in context with four-part writing, diatonic harmony, secondary functions and modulation. Examination of musical forms and structures. Emphasis on musical analysis and compositional applications.

Preparation for Course

P: T113 or placement examination.

Cr. 3.

MUS T115 - Sightsinging and Aural Perception I

Must be taken concurrently with T113. Required of all music majors. Introduction to solfeggio. Development of basic music dictation and sight-singing skills through the use of diatonic melodic and harmonic examples.

Preparation for Course

P: Music major or instructor's consent.

Cr. 1.

MUS T116 - Sightsinging and Aural Perception II

Must be taken concurrently with T114. Required of all music majors. Further development of music dictation and sight-singing skills through the use of more extended melodic and harmonic examples.

Preparation for Course

P: T115

Cr. 1.

Music History and Literature Credits: 4**MUS M201 - Music Literature I**

Survey of music from classical antiquity to 1750. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: T114 or consent of instructor.

Cr. 2.

MUS M202 - Music Literature II

Survey of music from the classical era to the present. Designed to develop a perspective on the evolution of music in its socio-cultural milieu, a repertoire of representative compositions, and a technique for listening analytically.

Preparation for Course

P: M201 with grade of C or better or consent of instructor.

Cr. 2.

Applied Study and/or Ensemble Credits: 6-12

Placement in ensembles and/or applied studios by audition only.

- Applied Study (with jury examination) Credits: 4-8
- Ensembles Credits: 2-4

Electives Credits: 0-6

Students may work with an advisor in the Department of Music to select electives to fulfill the remaining credit hours.

Concert Attendance Credits: 0

MUS X095 - Performance Class

Required of all music majors. Performance laboratory for all areas of musical performance for music majors; concert attendance required of both music majors and minors. Music minors must submit written reports on concerts attended.

Cr. 0.

(2-4 Semesters)

Organizational Leadership and Supervision Minor

Program: Minor

Division of Organizational Leadership and Supervision

Neff Hall 288 ~ 260-481-6420 ~ www.ipfw.edu/ols

If you are pursuing a major other than organizational leadership and supervision, you may earn a minor in organizational leadership and supervision by completing the following courses with a grade of C or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

OLS 375 - Training Methods

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the role of the supervisor in on-the-job training.

Preparation for Course

P: 252.

Cr. 3.

OLS 376 - Human Resources Issues

A survey of modern personnel practices including the legal environment, EEO and affirmative action, human resources planning, recruitment and selection, training and development, compensation and benefits, safety, and labor relations. Emphasis is on practice and applications.

Preparation for Course

P: 252.

Cr. 3.

Additional Credits in OLS: 3

Total Credits: 18

See the OLS advisor for a list of approved OLS electives.

Philosophy Minor

Program: Minor

Department of Philosophy

College of Arts and Sciences

Classroom Medical 23 ~ 260-481-6366 ~ www.ipfw.edu/phil

If you are pursuing a major other than philosophy, you may earn a minor in philosophy by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW. Substitutions for these courses may be made with the approval of the department.

Program Requirements

PHIL 303 - History of Modern Philosophy

Readings in, lectures on, and discussions about the major and minor philosophical figures from the Renaissance through Kant. This includes fairly intensive study of the works of Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. Contemporary nonphilosophical figures such as Newton and Calvin may also be considered.

Preparation for Course

P: 110; R: 301.

Cr. 3.

One of the following: Credits: 3

PHIL 110 - Introduction to Philosophy

An introduction to basic problems and types of philosophy, with special emphasis on the problem of knowledge and nature of reality.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

PHIL 120 - Critical Thinking

This course is designed to introduce students to the structure of successful reasoning. Topics covered will include language, definitions, vagueness and ambiguity; recognizing arguments; distinguishing between arguments and explanations; patterns for diagramming arguments; informal fallacies; nondeductive reasoning (the structure of

explanations); and disciplinary reasoning (the structure of arguments as encountered in such disciplines as ethics or business). Students who have earned credit in PHIL 150 are encouraged not to register for PHIL 120.

Cr. 3.

PHIL 150 - Principles of Logic

A study of the principles and methods employed in the logical appraisal of arguments. Topics covered will include informal fallacies; syllogistic logic and Venn diagrams; sentence logic (truth tables and rules of inference); and first-order predicate logic, up to but not including definite descriptions and identity.

Cr. 3.

One of the following: Credits: 3

PHIL 301 - History of Ancient Philosophy

A survey of Greek philosophy from its beginning in the Milesian school through the Presocratics to Plato and Aristotle.

Preparation for Course

P: PHIL 110

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

PHIL 302 - History of Medieval Philosophy

A survey of the main trends and figures of medieval philosophy, with an emphasis on metaphysics, epistemology, and ethics. Readings (in English translation) may include Augustine, Boethius, Avicenna, Anselm, Abelard, Maimonides, Aquinas, Scotus, Ockham, and Suarez.

Preparation for Course

P: PHIL 110

Cr. 3.

PHIL 304 - 19th Century Philosophy

A study of the significant issues raised by such 19th-century philosophers as Fichte, Hegel, Schopenhauer, Comte, Mill, Marx, Nietzsche, Kierkegaard, and James.

Cr. 3.

Credits in a philosophy elective at the 400 level or above Credits: 3

(PHIL 493 and PHIL 590 count toward the minor only with the approval of the department.)

Total Credits: 15

Physics Minor

Program: Minor

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

If you are pursuing a major other than physics, you may earn a minor in physics by completing the following credits with a grade of C or better in each course and earning at least 9 credits as resident credit at IPFW:

Program Requirements

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Credits in two of the following: Credits: 6-8

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 16-18

Political Science Minor

Program: Minor

Department of Political Science

College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/pols

Program Requirements

If you are pursuing a major other than political science, you may earn a minor in political science by completing a minimum of 18 credits, including at least 9 resident credits, in the discipline with a grade of C or better in each course. A maximum of 6 credits may be earned in 100-level courses, and a minimum of 6 credits in courses at or above the 300 level (not including Y398 or Y482). Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 of the 18 credits; these two courses together may not count for more than 9 of the 18 credits.

Professional Writing Minor

Program: Minor
Department of English and Linguistics
College of Arts and Sciences

Classroom-Medical Building 145 ~ 260-481-6841

This program is available to all IPFW students except those pursuing the language, teacher-certification, or writing concentration with a major in English.

Program Requirements

You may earn a minor in professional writing by completing the following 15 credits, including at least 8 credits completed as resident credit at IPFW, with a grade of C or better in each course.

Preparatory course work in writing (minimum of 3 credits)

One of the following: Credits: 3

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Advanced course work in professional writing

(minimum of 9 credits)

ENG W365 - Theories and Practices of Editing

Students will examine textual and literary approaches to editing given particular rhetorical contexts. Emphasis will be placed on how to make editorial judgments that promote editorial standards without violating authorial intent.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W367 - Writing for Multiple Media

Introduces principles and practices of multimedia design and implementation, with emphasis on writing in multimedia contexts. Students will consider ways that new media affect the production and reception of writing and its relationship to other forms of communication (e.g., oral and visual).

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

ENG W420 - Argumentative Writing

Examines techniques for analyzing and constructing arguments, especially the use of proofs, evidence, and logic. Considers such issues of argument as the ethics of persuasion and the use of style. Students write researched arguments on political, legal, scientific, and academic issues.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

ENG W421 - Technical Writing Projects

Application of the principles of technical reporting to a major piece of primary research and development, usually a senior project in the major. May be repeated for credit.

Preparation for Course

P: junior or senior class standing and ENG W234 or W331.

Cr. 1-3.

Session Indicators

(fall, spring)

ENG W425 - Research Methods for Professional Writers

Preparation for Course

Examines quantitative, qualitative, and action research techniques as practiced by professionals working in various fields of writing: technical and business writing, freelance and creative writing, academic writing, community and grant writing, journalism, and the teaching of writing. It includes coverage of both primary (i.e., field) and secondary (i.e., library) research.

Cr. 3.

ENG W462 - Studies in Rhetoric and Composition

An examination of major rhetorical theories and their applications for writers and for teachers of composition. Focuses on theories of discourse, invention, form, style, and audience. Aims at developing greater understanding of the writing process. May be repeated with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W233 or equivalent and junior or senior standing.

Cr. 3.

Variable Title

(V.T.)

(Only topics specifically related to professional writing)

Elective (minimum of 3 credits) Credits: 3

Any course from the above two areas not used to fulfill the area distribution requirements. Any other course at the 200 level and above which supports your professional interest in writing. Examples include but are not limited to the following courses:

- **VCD 254** Principles of Graphic Design

This course must be approved by the English department chair.

COM 251 - Introduction to the Electronic Mass Media

A study of the ways in which ideas are expressed through techniques unique to the language of radio, television, and film. The course focuses on the scenes, camera and lens movement, tempo, editing concepts, montage, sound, perspective, fades, segues, and other special effects prerequisite to effective communication through electronic media. No credit for both COM 248 and COM 251.

Cr. 3.

COM 324 - Introduction to Organizational Communication

An introduction to fundamental concepts and basic research related to communication behavior in organizational settings. Units cover message processing, leadership communication, communication networks, communication training, and communication audits.

Preparation for Course

P: 114.

Cr. 3.

ENG W350 - Advanced Expository Writing

Close examination of the assumptions and choices that govern content and style, and practice in the techniques of producing a variety of researched papers incorporating primary and secondary research appropriate to audience and purpose.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Notes

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ENG W405 - Writing Prose - Nonfiction

Study and practice of the essay. Review of historical, thematic, and stylistic range of the form, with emphasis on producing effective, precise communication of thoughtful, informed personal statements.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 2-3.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

Total Credits: 15

Psychology Minor**Program: Minor****Department of Psychology****College of Arts and Sciences**

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

If you are pursuing a major other than psychology, you may earn a minor in psychology by completing the following 15 credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Program Requirements**PSY 120 - Elementary Psychology**

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

One of the following: Credits: 3

PSY 314 - Introduction to Learning

This course attempts to make clear the theoretical and practical implications of learning principles and findings. Various theories of learning are examined and the implications of theories, and the learning approach generally, for a variety of practical problems are emphasized.

Preparation for Course

P: PSY 120 (or equivalent) or consent of instructor; R: ENG W233.

Cr. 3.

Hours

Class 3.

PSY 329 - Psychobiology II: Principles of Psychobiological Psychology

The relationship of physiology and basic anatomy, with special emphasis on the central nervous system, to variables fundamental to the study of psychology.

Preparation for Course

P: PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

PSY 416 - Cognitive Psychology

This course is designed to be a survey course covering a variety of research and theories within the field of cognitive psychology. A number of different topics will be reviewed including attention, perception, human memory, knowledge representation, language, problem solving, reasoning, intelligence, skill acquisition, and expertise.

Preparation for Course

P: Junior class standing; PSY 120 (or equivalent); R: ENG W233.

Cr. 3.

One of the following: Credits: 3

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Credit not given for both PSY 235 & PSY 369

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Credit not given for both PSY 235 & PSY 369

One of the following: Credits: 3

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 420 - Introduction to Personality Theory

Personality theories selected from the traditions of psychoanalysis, behaviorism, and phenomenology-existentialism are presented and contrasted in the fundamental assumptions made by each outlook. Theorists include Freud, Adler, Jung, Dollard and Miller, Skinner, Bandura, Rogers, Bass, Benswanger, and Kelly.

Preparation for Course

P: 6 credits in psychology; R: ENG W233.

Cr. 3.

Additional credits in a psychology course numbered 200 or above Credits:
3

Total Credits: 15

Public Affairs Minor

Program: Minor

Neff Hall 260 ~ 260-481-6351 ~ www.ipfw.edu/spea/

The minor in public affairs offers you the opportunity to become more knowledgeable in the field of public administration and the policy implications of the public sector. It is available to students who are enrolled in baccalaureate programs and can enhance career opportunities for liberal arts and other majors.

Program Requirements

Each minor requires 15 hours of specified courses with a 2.0 grade-point average, and none of the courses may be taken by correspondence through the Division of Continuing Studies.

SPEA majors may double-count only 6 of the required 15 credit hours in other SPEA major or minor requirements. Students may earn more than one minor from SPEA, but each minor must have at least 9 hours that are not satisfying other major or minor requirements.

SPEA V170 - Introduction to Public Affairs

Broad coverage of public affairs through critical and analytical inquiry into policy-making at all levels of government. Particular emphasis on intergovernmental relations as they affect policy in the federal system.

Cr. 3.

C- or better required

One of the following: Credits: 3

SPEA E162 - Environment and People

An interdisciplinary examination of the problems of population, pollution, and natural resources and their implications for society.

Cr. 3.

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

Three of the following: Credits: 9

SPEA E272 - Introduction to Environmental Sciences

Application of principles from the life and physical sciences to the understanding and management of the environment. Emphases will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems.

Preparation for Course

P: a statistics course.

Cr. 3.

SPEA E400 - Topics in Environmental Studies

An interdisciplinary consideration of specific environmental topics. May be repeated for credit.

Preparation for Course

P: E272.

Cr. 3.

(may be repeated)

SPEA V263 - Public Management

This course is an examination of the management process in public organizations in the United States. Special attention will be given to external influences on public managers, the effects of the intergovernmental environment, and in particular, problems of management in a democratic, limited government system.

Cr. 3.

SPEA V366 - Managing Behavior in Public Organizations

This course provides an introduction to the management of people in public organizations. Focus is on behavioral science in management and related analytical and experiential applications.

Cr. 3.

SPEA V373 - Human Resources Management in the Public Sector

The organization and operation of public personnel-management systems, with emphasis on concepts and techniques of job analysis, position classification, training, affirmative action, and motivation.

Cr. 3.

SPEA V376 - Law and Public Policy

The purpose of this course is to provide a basic understanding of the origins, process, and impact of law in the making and implementing of public policy. The course's major objective is to provide students with the substantive concepts necessary to understand the judicial system and law in its various forms.

Cr. 3.

SPEA V450 - Contemporary Issues in Public Affairs

Extensive analysis of selected contemporary issues in public affairs. Topics vary from semester to semester. May be repeated for credit.

Cr. 1-3.

Variable Title

(V.T.)

(may be repeated)

Total Credits: 15

Public Relations Minor

Program: Minor

School of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

The IPFW Journalism Program offers two minors that may be completed as part of a bachelor's program at IPFW. The public relations minor will appeal to those wishing to concentrate in the corporate communications or advertising/public relations industries; the journalism minor described earlier provides basic underpinning for those interested in various media.

These minors are especially appropriate for media and public communication or English communication media majors.

Program Requirements

To earn the minor, you must complete each course with a grade of C or better, with at least 11 of the credits taken as resident credit at IPFW.

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

Two of the following: Credits: 6

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J310 - Editorial Practices

Workshop in fundamentals of editing and reporting with special emphasis on news judgment, fairness, accuracy, and editorial balance. Practical experience in gathering, writing, and editing news and public affairs materials. Stress on principles applying to all mass media.

Preparation for Course

P: JOUR J200.

Cr. 3.

JOUR J315 - Feature Writing

The course aims to develop skill in gathering and presenting feature story material, exploring the realm between straight news and editorials. It follows feature-story practice in combining information with entertainment stressing the imperative of research, accuracy, and mechanical correctness.

Preparation for Course

P: JOUR J200.

Cr. 3.

Two of the following: Credits: 6

COM 253 - Introduction to Public Relations

An analysis of public relations theory and practice from their origins to the present. From a communication perspective, the course examines public relations environments, audiences, and message strategies.

Cr. 3.

COM 332 - Television Studio Production

Basic principles of producing, writing, and directing for television. Treats program types and television criticism, and explores creative treatment of visual, artistic, and nonverbal elements of communication in television.

Preparation for Course

P: COM 248 or 251.

Cr. 3.

Hours

Class 1, Lab. 4.

JOUR J280 - Sophomore Seminar in Journalism

Selected topics in journalism, e.g., professional ethics, government and the press, contemporary problems of the press.

Preparation for Course

P: 6 hours of journalism including C200.

Cr. 3.

Variable Title

(V.T.)

JOUR J390 - Corporate Publications

This course focuses on the practical and specialized concerns of editing and designing newsletters, tabloids, magazines, and newspapers for business, industry, institutions, or other organizations. Attention is given to audience surveys, readability, copy editing, headlines, photographs, cutlines, copyfitting, and printing instruction, with special emphasis on design techniques for the four major types of organizational publications. Includes practice in all facets of publication design. Recommended for persons interested in print communications programs or in developing limited circulation publications. Limited enrollment; consent of instructor required.

Cr. 1-3.

Variable Title

(V.T.)

JOUR J427 - Public Relations in a Democratic Society

Lectures and discussion on dissemination of public information by industry and institutions. Examination of procedures and policies and evaluation of public relations efforts. Contrast public relations practices in America with those in other nations and cultures.

Preparation for Course

P: COM 253 or JOUR J321.

Cr. 3.

One of the following: Credits: 3

COM 490 - Internship in Communication

Experiential, supervised training in public relations, journalism, telecommunication, oral interpretation, speech education, organizational communication, or public communication. Usually taken in junior or senior year.

Preparation for Course

P: 114, first course in area, and consent of instructor.

Cr. 1-3.

Notes

May be repeated for credit.

ENG W398 - Internship in Writing

Combines study of writing with practical experience of working with professionals in journalism, business communication, or technical writing. Researched reports are required. Evaluations made by both supervisor and instructor. May be repeated, with permission of instructor, with different topics for a maximum of 9 credits.

Preparation for Course

P: ENG W131, W135, or honors eligibility.

Cr. 1-3.

JOUR J492 - Media Internship

Must have permission to enroll. Supervised professional experience in communications media. Does not contribute to 27 credit hours of required course work in journalism major but will count toward 33 credit hours maximum allowed in journalism and telecommunications. May be repeated, but student may take no more than 3 hours of internship credit for the B.A. either through the Journalism Program or any other academic unit.

Cr. 1-3.

Total Credits: 18

Religious Studies Minor

**Program: Minor Department of Philosophy
College of Arts and Sciences**

Classroom-Medical Building 23~ 260-481-6366 ~ www.ipfw.edu/phil

Religious Studies is an interdisciplinary program housed in the department of philosophy. Students may earn a minor in religious studies by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW. Substitutions for these courses may be made with the approval of the program coordinator.

Program Requirements

REL 112 - Religion and Culture

An introduction to modern academic theories regarding the origin, form, and function of religion in human life supported by case studies drawn from various world religious traditions. Credit not given for both REL 112 and PHIL 112.

Cr. 3.

PHIL 206 - Philosophy of Religion

This course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death.

Cr. 3.

Notes

Indiana Core Transfer Library course.

REL 230 - Religions of the East

A study of the history, teaching, and present institutions of the religions of India, Southeast Asia, China, and Japan. This will include Hinduism, Jainism, Sikhism, Buddhism, Confucianism, Taoism, Shintoism, and Zoroastrianism.

Cr. 3.

REL 231 - Religions of the West

A comparative study of the origins, institutions, and theologies of the three major Western religions, Judaism, Christianity, and Islam.

Cr. 3.

Additional Credits

One course at the 300 level or above with significant emphasis on the academic study of religion. Credits: 3

Note: Must get course approval from the program coordinator.

Total Credits: 15

Sociology Minor

Program: Minor

Department of Sociology

College of Arts and Sciences

Classroom-Medical Building 241 ~ 260-481-6842 ~ www.ipfw.edu/sociology

Program Requirements

If you are pursuing a major other than sociology, you may earn a minor in sociology by completing 15 credits with a grade of C or better in each course, including at least 8 credits as resident credit at IPFW, a minimum of 9 credits at the 300 level or above, and no more than 3 credits of SOC S495 or directed study.

Spanish Minor

Program: Minor
Department of International Language and Culture Studies
College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are pursuing a major other than Spanish, you may earn a minor in Spanish by completing the following credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW:

Study Abroad Both majors and nonmajors are encouraged to study abroad. For those who wish to study Spanish, Indiana University administers and cosponsors an academic-year program in Madrid, Spain; semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago); and summer programs in Spain (Salamanca) and Mexico (Cuernavaca and Guanajuato).

Program Requirements

- Additional 300- or 400-level Spanish civilization, language, or literature course Credits: 3

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

One of the following 300-level literature courses Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

Total Credits: 15

Spanish Teaching Minor

Program: Teaching Minor

Department of International Language and Culture Studies

College of Arts and Sciences

Classroom-Medical Building 267 ~ 260-481-6836 ~ www.ipfw.edu/ilcs/

If you are already licensed or qualified to be licensed in another area, you may earn a Spanish teaching minor by completing the following 38 credits with a grade of C or better in each course.

Program Requirements

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following 300-level literature courses Credits: 3

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

One of the following culture/civilization courses: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301–S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301–S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Total Credits: 38

Theatre Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

Program Requirements

You may earn a theatre minor by completing the following courses and earning a grade of C or better in each:

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 168 - Theatre Production I

Application of technical-theatre practice in scenic construction, painting, lighting, sound, costuming, and stage management. Students will be assigned to work on experimental and major stage productions. May be repeated for credit.

Cr. 1.

Hours

Lab. 6.

Must be repeated once for total of 2 credits

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following: Credits: 3

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Theatre electives Credits: 3

Total Credits: 23

Women's Studies Minor

Program: Minor**College of Arts and Sciences**

Classroom-Medical Building 35F ~ 260-481-6711 ~ www.ipfw.edu/wost

Women's studies is based on the premise that the study of women's experiences, concerns, social roles, and creativity is essential to our knowledge of humankind and society. Feminist scholarship and theory provide the knowledge and analytical tools necessary for a gender-balanced perspective on our world, both past and present. The Women's Studies Program affords you the opportunity to pursue feminist scholarship on women and gender through a variety of interdisciplinary courses.

See College of Arts and Sciences in see Part 4 for further information.

If you are pursuing a major other than women's studies, you may earn a minor in women's studies by completing the following 15 credits with a grade of C or better in each course and earning at least 8 credits as resident credit at IPFW.

Program Requirements

- Credits from cross-listed courses in humanities or visual arts Credits: 3
- Credits from cross-listed courses offered in social science or natural science Credits: 3
- Additional credits in cross-listed or WOST-prefixed courses Credits: 6

WOST W210 - Introduction to Women's Studies

An interdisciplinary introduction to women's studies via readings from core discipline areas and presentation of methodological/ bibliographical tools for social science research on gender issues. Examines women's historic and contemporary status legally, politically, and economically, as well as women's struggle in identity, expression, sexuality, and lifestyle.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Social and Behavioral Sciences distribution requirement.

Total Credits: 15

Research Certificate

Anthropology Research Certificate

Program: Research Certificate in Anthropology

Department of Anthropology

College of Arts and Sciences

Kettler Hall G11A ~ 260-481-6272 ~ www.ipfw.edu/anthropology

The student learning outcomes for the degree are as follows:

- Achieve familiarity with different cultures in at least two regions of the world
- Know the major anthropological approaches to understanding the human condition
- Be able to explain societies in a holistic manner
- Achieve competency in writing
- Demonstrate critical thinking
- Acquire quantitative skills for analysis
- Demonstrate a willingness to engage learning and scholarship as a life-long endeavor

Courses in anthropology provide an understanding of the nature of cultures and help you assess various explanations of human behavior; they also assist in the development of analytical and critical abilities. The curriculum is structured to include studies in the history and theory of anthropology, in four anthropological fields (ethnology, archaeology, bioanthropology, and linguistics), in at least two different world ethnographic areas, and in topical specializations. The program helps you prepare for graduate study, for teaching, and for careers in which the understanding of various cultures is an asset.

Although a minor is not required for the B.A. with a major in anthropology, an outside concentration is recommended. Fifteen credits in history, political science, psychology, or sociology support the concentration.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

ANTH H445 - History and Theory of Anthropology

An examination of the historical development of the field of anthropology concentrating upon the intellectual roots and context that surrounded its emergence as well as contemporary problems, perspectives, methods, and theories. Course designed for graduating anthropology majors.

Preparation for Course

P: ANTH E105 and B200.

Cr. 3.

Cognate Research Tools

Any STAT course or one of the following:

POLS Y395 - Quantitative Political Analysis

Introduction to methods and statistics used in political inquiry, including measures of central tendency and dispersion, probability, sampling, statistical inference and hypothesis testing, measures of association, analysis of variance, and regression.

Preparation for Course

P: MA 153 or MA 168 (or equivalent), or consent of instructor.

Cr. 3.

Session Indicators

(fall)

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

Research Methods and Supervised Individual Research Credits: 6

Individualized Research

ANTH A495 - Individual Readings in Anthropology

Preparation for Course

P: consent of instructor.

Cr. 1-4.

Session Indicators

(fall, spring)

Variable Title

(V.T.)

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.
and/or

Research Methods

ANTH P382 - Archaeological Research Design

Construction and implementation of archaeological research design using a graphics-oriented computer simulation model. Computer displays sites, features, and artifacts located by student using various methods of survey and excavation. Hypothesis testing, sampling strategies, and budget constraints are emphasized.

Cr. 3.

ANTH P400 - Archaeological Methods and Techniques

Methods and mechanics of archaeology in field and laboratory. Use of survey instruments, drawing tools, and photographic equipment, treatment of recovered materials leading to printed report.

Preparation for Course

P: consent of instructor.

Cr. 2-4.

Dual Level Course

Eligible for graduate credit. Maximum of 4 credits.

Total Credits: 15

Note

Each student must present his or her research in a professional forum approved by the anthropology faculty.

Biology Research Certificate

Program: Research Certificate
Department of Biology
College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

The student learning outcomes for the degree are as follows:

- To provide students with significant hands-on experience and training in the use of scientific methods to test hypotheses and to answer questions.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Cognate Research Tools

STAT 340 - Elementary Statistical Methods II

Statistical methods of simple linear regression, multiple linear regression, experimental design, analysis of variance, and nonparametric analysis. One or more statistical computer programs will be used. Student projects required, typically using data from the student's major.

Preparation for Course

P: 240, 301, ECON 270, PSY 201 (or equivalent), one semester statistics course with a grade of C or higher.

Cr. 3.

Research Methods and Supervised Individual Research Credits: 6

The BIOL 295/595 must contain a prefix in its title to signify laboratory or fieldwork involving the design of an original project and collection and analysis of data.

BIOL 295 - Special Assignments

Special work such as directed reading, library research, and laboratory or field research. The field in which studies are performed will be indicated on the student's record. The substance of the project must be agreed upon by the student and a faculty member and approved by the chair.

Cr. 1-3.

Hours

Class 0-3, Lab. 0-6.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

and/or

BIOL 595 - Special Assignments

Independent study or research or presentation of material not available in the formal courses of the department. The field in which work is offered will be indicated on the student's record. Research projects must be agreed upon by the student and a faculty member and approved by the chair. May be repeated for credit.

Preparation for Course

P: consent of instructor; open only to science majors.

Cr. 1-4.

Hours

Class 2-8, Lab. 0-12.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Dual Level Course

Undergraduate-Graduate

Total Credits: 30

Chemistry Research Certificate

Program: Research Certificate

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

- **Mathematical and quantitative reasoning**
 - Student will be able to analyze, synthesize, and comprehend experimental and computational data describing the physical universe. This skill requires knowledge of mathematical and statistical techniques that can be used analytically.
- **Classical and instrumental laboratory techniques: both analytical and synthetic**
 - Students will learn precise measuring techniques as well as careful and meticulous record-keeping. They will master the use of a variety of modern instruments and will become proficient in fundamental organic synthetic methods.
- **Individual and collaborative problem-solving**
 - The student will develop independent problem-solving skills as well as the ability to work collaboratively in a team environment on complex chemical systems.
- **Chemical literature**
 - The student will learn basic tools and concepts for efficient use of chemical literature, including multiple computerized databases. The student will also be expected to analyze sources for relevance and authority and to learn how scientific writings are constructed according to style.
- **Philosophy of Science**
 - The student will examine topics at the intersection of science and philosophy, specifically addressing fundamental issues in the history, philosophy, and theoretical structure of modern science.
- **Research in Chemistry**
 - The student will learn research methods and tools appropriate to chemistry and will apply them to the design and execution of a research project. The student will present results of the research project.
- **Summary of key concepts**
 - In the teaching of Chemistry from the point-of-view of various sub-disciplines, the following concepts form the core course content. It should be noted that courses offered by the IPFW Department of Chemistry will include, but are not simply limited to, the following points of emphasis:
 - **Analytical Chemistry**

- Analytical methods (classical and instrumental)
 - Sensitivity and detection limits
 - Statistical treatment of data
- **Biochemistry (for premedicine and pre dental options)**
 - Structure, metabolic relationships, and regulation of biomolecules
- **General Chemistry**
 - Semi-quantitative microscopic model of the physical universe based on macroscopic observations
 - Terminology
 - Periodic relationships
 - Elementary computational skills
 - Introductory laboratory skills
- **Inorganic Chemistry**
 - Chemical bonding and structure
 - Reactivity, reaction mechanisms, and properties
 - Solid state and material science
 - Organometallic chemistry
 - Spectroscopic determination of structure
- **Organic Chemistry**
 - Chemical bonding and structure including valence bond and molecular orbital theories
 - Reactivity, reaction mechanisms, and properties of the important functional groups
 - Synthesis
 - Spectroscopic determination of structure
 - Material science and bio-organic chemistry
- **Physical Chemistry**
 - Mathematical and physical principles that underlie modern Chemistry
 - Detailed understanding of the modern microscopic model of the universe
 - The principal topic areas are:
 1. Quantum Chemistry
 2. Thermodynamics
 3. Statistical mechanics
 4. Spectroscopy
 5. Kinetics

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PHIL 351 - Philosophy of Science

This course examines topics at the intersection of science and philosophy. Primary topics: fundamental principles of the scientific method; the nature of scientific change; the epistemology of science and the debate over scientific realism; scientific convergence and the future of science; consilience of science with nonscience; science and pseudoscience; science and human values. Secondary topics: the strange world of contemporary physics; ethical issues in scientific research; science and religion; science and education; science and the meaning of life.

Cr. 3.

Cognate Research Tools

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Research Methods and Supervised Individual Research

CHM 424 - Analytical Chemistry II

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

Preparation for Course

P: CHM 321; C: CHM 384.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 499 - Special Assignments

Undergraduate research. Students will participate in an original research project with a faculty member. Students are required to submit a written report and make a short oral presentation of their research project. May be repeated for credit.

Cr. 1-5

Hours

Lab. 3-15.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Credits: 3

Total Credits: 17

Mathematical Sciences Research Certificate

Program: Research Certificate

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

The student learning outcomes for the degree are as follows:

- Students in the program will learn research methods and tools appropriate to the mathematical sciences, learn the foundations of research in the theory of the discipline, learn the advanced communication skills, and apply what they have learned by executing a research project and communicating the results to others.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

Cognate Research Tools

One of the following Credits: 3-4

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Research Methods and Supervised Individual Research

- One upper-level undergraduate or dual-level course in mathematics or statistics appropriate to the area of research (e.g., MA 453, MA 441, MA 575, STAT 517) Credits: 3

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 490 - Topics in Mathematics for Undergraduates

Supervised reading and reports on approved topics in various fields.

Cr. 1-5.

Variable Title

(V.T.)

Credits: 3

Total Credits: 18-19

Physics Research Certificate

Program: Research Certificate

Department of Physics

College of Arts and Sciences

Kettler Hall 126B ~ 260-481-6306 ~ www.ipfw.edu/physics/

The student learning outcomes for the degree are as follows:

- Add student learning outcome
- Add student learning outcome

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Cognate Research Tools

One of the following Credits: 4

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

Research Methods and Supervised Individual Research

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following Credits: 3-4

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 325 - Scientific Computing

Programming in C. Numerical techniques in Integration Root finding, and solution of systems of ordinary and partial differential equations. These techniques will be applied to models in the natural sciences (physics, chemistry, biology) and engineering. Includes the use of mathematical subroutine libraries.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 361 - Electronics for Scientists

DC and AC circuit theory. Fourier methods, electronic structure of crystals, semiconductor devices, common scientific instrumentation.

Preparation for Course

P: 251 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 405 - Atomic and Molecular Physics

Basic topics of atomic and molecular physics will be covered in lecture and demonstrations. The course will use fundamental quantum mechanics to describe the hydrogen atom, multi-electron atoms, and simple molecules. The course will also cover the interaction of atoms with other atoms, electrons and photons, and include discussions of various forms of atomic and molecular spectroscopy.

Preparation for Course

P: 342 and 343.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 520 - Mathematical Physics

Portions of selected areas of mathematics that are of particular importance in physics are covered. These are drawn from vector and tensor operators, infinite series, analytic functions, and the calculus residues, partial differential equations, and the special functions of mathematical physics.

Preparation for Course

P: PHYS 310, 322, 330 or consent of instructor.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Credits in the following: 6

PHYS 270 - Special Topics in Physics

Specialized topics in physics. May be repeated for credit.

Preparation for Course

P: special permission.

Cr. 1-5.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 470 - Special Topics in Physics

May be repeated for credit.

Preparation for Course

P: special permission.

Cr. 1-5.

Variable Title

(V.T.)

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 20-21

Psychology Research Certificate

Program: Research Certificate
Department of Psychology
College of Arts and Sciences

Neff Hall 388 ~ 260-481-6403 ~ www.ipfw.edu/psyc

The student learning outcomes for the degree are as follows:

- Students will demonstrate the ability to understand and use the major research methods in psychology, including ethical standards, design, data analysis, and interpretation.

The research certificate is described under Arts and Sciences in Part 4 of this *Bulletin*.

Research Writing

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

History, Philosophy, or Theory of the Discipline

PSY 540 - History of Psychology

A review of the philosophical, theoretical, and methodological issues that entered into the development of modern psychology. Emphasis is placed on historical themes that continue to be active in the science and profession of psychology.

Preparation for Course

P: senior class standing and 12 credits in psychology.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Cognate Research Tools

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

Research Methods and Supervised Individual Research

- PSY 203 - Introduction to Research Methods in Psychology Cr. 3.
- PSY 496 - Readings and Research in Psychology Cr. 3.
(as a research assistant to a faculty member)
- PSY 499 - Honors Thesis in Psychology Cr. 3.

Total Credits: 18

Teacher Certification

Chemistry Teaching Minor

Program: Minor

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are already licensed or qualified to be licensed in another area, you may earn a chemistry teaching minor by completing the following 32 credits with a grade of C or better in each course.

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Total Credits: 32

Earth and Space Science Teaching Minor

Program: Minor

Department of Educational Studies

School of Education

Neff Hall 250 ~ 260-481-6441 ~ www.ipfw.edu/educ

If you are already licensed or qualified to be licensed in another area, you may earn an earth and space science teaching minor by completing the following 27–28 credits with a grade of C or better in each course.

Program Requirements

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of following Credits: 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

with GEOL L100 (4 credits)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

with L100 (4 credits)

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

One of following Credits: 3

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of following Credits: 3

- GEOL G315 - Environmental Conservation

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Total Credits: 27-28

Economics (Social Studies) Teacher Certification

Program: Teacher Certification
College Arts and Sciences

Neff Hall 366B ~ 260-481-6483 ~ www.ipfw.edu/econ

The student learning outcomes for the degree are not available, please contact the department.

Economics is the study of the rational allocation of scarce resources. The major seeks to develop those critical skills that help you understand and solve problems in a wide variety of circumstances. These analytical abilities are valuable in the business world and many professional disciplines such as law and social work.

This program is offered in close cooperation with the Department of Economics in the Richard T. Doermer School of Business and Management Sciences, which offers all economics courses required for the major.

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in economics and all requirements for teacher certification. Full information on teacher certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC 201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Geology Teacher Certification

Program: Teacher Certification
Department of Geosciences
College of Arts and Sciences

Science Building 230 ~ 260-481-6249 ~ www.geosci.ipfw.edu

You may be certified as a teacher of earth and space science after fulfilling the requirements for a B.A. with a major in geology or a B.S. in geology (ENG W233 must be taken as your writing requirement) and the requirements for teacher certification listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Additional information on teacher-certification requirements is available from the School of Education.

Professional Education

Prior to being admitted to the teacher education program, you must complete the Initial Requirement courses and pass the PPST.

Initial Requirements

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 1

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Block I

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Block II

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC M401 - Laboratory/Field Experience

Laboratory or field experience for seniors.

Cr.0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Student Teaching

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

EDUC M501 - Lab/Field Experience

Cr. 0-3.

Dual Level Course

Eligible for graduate credit.

Credits: 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School certification) Credits: 4

History (Social Studies) Teacher Certification

Program: Teacher Certification
Department of History
College of Arts and Sciences

Classroom-Medical Building 209 ~ 260-481-6686 ~ www.ipfw.edu/hist

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in history and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Language Arts Teaching Minor

Program: Minor
Department of English and Linguistics

Classroom-Medical Building 145 ~ 260-481-6841 ~ www.ipfw.edu/engl

If you are already licensed or qualified to be licensed in another area, you may earn a language arts teaching minor by completing the following 24 credits with a grade of C or better in each course.

Program Requirements

- One elective 300-level course in British literature Credits: 3
- One elective 300-level course in American literature Credits: 3

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

One of the following Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following Credits: 3

- One course in multicultural literature

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Total Credits: 24

Life Science Teaching Minor

Program: Minor

Department of Biology

College of Arts and Sciences

Science Building 330 ~ 260-481-6305 ~ www.ipfw.edu/bio

If you are already licensed or qualified to be licensed in another area, you may earn a life science teaching minor by completing the following 29 credits with a grade of C or better in each course.

Program Requirements

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Total Credit: 29

Mathematics Teacher Certification Minor

Program: Teacher Certification Minor

Department of Mathematical Sciences

College of Arts and Sciences

Kettler Hall 200 ~ 260-481-6821 ~ www.ipfw.edu/math

If you are already licensed or qualified to be licensed in another area, you may earn a mathematics teaching minor by completing the following 26–27 credits with a grade of C or better in each course.

Program Requirements

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3-4

CS 114 - Introduction to Visual Basic

This course provides an introduction to programming using the Visual Basic language and its integrated development environment. Topics to be covered include the syntax and structure of the VB language; controls, dialog boxes, and other interface tools; menu design; multiple forms; error-trapping; and arrays. Other topics that may be covered include object linking and embedding (OLE); VB for applications; database development using record sets and databound controls; data handling; grids; validation and election; drag and drop; and graphics, and new revisions for interoperability with other languages.

Preparation for Course

C: MA 150 or MA 153.

Cr. 3.

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Total Credits: 26-27

Mild Intervention Certification

In addition to the major in elementary or secondary education, students may earn certification in mild intervention. (This certification qualifies a teacher to teach students with emotional, learning, mild, and moderate disabilities in elementary or secondary school settings, depending on your current license.) Each course in the Mild Intervention Certification must be completed with a grade of C or better. (Note: a 24-credit graduate version of this program is available. See the graduate bulletin for more details.)

Program Requirements

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

EDUC K370 - Introduction to Learning Disabilities

Survey of historical development and current status of definitions, classifications, assessment, and treatment procedures for learning-disabled students.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC K441 - Transition Across the Lifespan

This course is designed to give prospective teachers information and skills necessary to effectively teach students with disabilities at the high school level. An overview of characteristics of secondary students with mild disabilities, school programs, transition from school life to adult life, curriculum issues, and strategies of effective instruction for students with disabilities will be covered.

Cr. 3.

EDUC K453 - Management of Academic and Social Behavior

Surveys principles of behavior management as they pertain to educational environments. Students will learn how to define, observe, measure, record, and change academic and social behavior.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC K465 - Service Delivery Systems and Consultation Strategies

Reviews methods of implementing service delivery systems; consulting with professionals and parents; designing in-service training programs; and developing referral systems, curricular and personnel resources, and evaluation techniques used in special education programs.

Cr. 3.

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(Final Course)

And Select:

EDUC K352 - Education of Children with Learning Problems (LD and EMR)

Educational programs for optimum growth and development of educable mentally retarded and learning-disabled children. Study and observation of curriculum content, organization of special schools and classes, and teaching methods and materials.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

And Select:

EDUC K371 - Assessment and Individualized Instruction in Reading and Mathematics

Emphasizes assessment and remediation procedures addressing reading and math problems of mildly handicapped students.

Preparation for Course

P: K205 or K206.

Cr. 3.

EDUC M301 - Laboratory/Field Experience

Laboratory or field experience for juniors.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Total Credits: 26

Physical Science Teaching Certification - Chemistry

To earn the physical science teaching certification, you must fulfill all requirements for the B.S. with a major in chemistry or physics, and you must complete ENG W233 as your writing requirement and satisfactorily complete the courses listed below.

The School of Education requires that you first complete EDUA F300, EDUC W200/M101, and EDUC K201 before you are permitted to take professional education courses. Prior to your junior year, you must successfully complete the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

To be eligible to apply for teacher licensure, you must earn a GPA of 2.00 or higher in each general education area. You should work closely with your advisor to ensure completion of general education requirements for teacher licensing. You must also earn a cumulative GPA of 2.50 or higher in your major area and the professional education courses with an overall GPA of 2.5 or higher. Each professional education course must be completed with a grade of C or better.

Content Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

School of Education Requirements

Prior to being admitted to the teacher education program, you must complete an initial set of requirements.

Initial Requirements:

- PPST

EDUA F300 - Topical Exploration in Education

A one-semester course on a particular topic, established at the request of a faculty member and with the approval of the Academic Affairs Committee.

Cr. 1-3.

Course Title: Invitation to Teaching

Credits: 2

EDUC K201 - Schools, Society, and Exceptionality

This course is designed to provide an overview of the many complex issues related to special education policy and practice in the United States. Content will include an introduction to the definitions and characteristics of various exceptionalities; an exploration of the options available for instructing exceptional children in public school settings; and discussions of the many important topics and issues related to planning and implementing special education in American public schools.

Cr. 1-3.

Credits: 2

EDUC M101 - Laboratory/Field Experience

Laboratory or field experience for freshmen.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC W200 - Using Computers for Education

Introduction to instructional computing, educational computing literature, and BASIC programming. Review and hands-on experience with educational software packages and commonly used microcomputer hardware.

Cr. 1.

Credits: 1

(a grade of A or B is required)

Block 1: Teacher Education (Prerequisite: Initial Requirements)

EDUC H340 - Education and American Culture

The present educational system, its social impact and future implications viewed in historical, philosophical, and sociological perspective.

Cr. 2-3.

Credits: 3

EDUC K206 - Teaching Methods for Students with Special Needs

This course will focus on curriculum and instructional methods for teaching students with diverse abilities and disabilities. Specifically, students will learn about the historical and legal precedents in special education, student-centered assessment and planning strategies, learning styles, curricular adaptations, individualized instruction, teaming strategies, building classroom communities, and planning for transitions, career exploration, and adult outcomes.

Cr. 1-3.

Credits: 3

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC P250 - General Educational Psychology

The study and application of psychological concepts and principles as related to the teaching-learning process, introduction to classroom management, measurement/evaluation, and disability awareness. Public school participation required.

Preparation for Course

P: W200.

Cr. 1-4.

Credits: 3

Block 2: Professional Education (Prerequisite: Block 1)

EDUC M201 - Laboratory/Field Experience

Laboratory or field experience for sophomores.

Cr. 0-3.

Hours

Lab. 0-3,

Variable Title

(V.T.)

Notes

May be repeated.

Credits: 0

EDUC M449 - Methods of Teaching Science in the Secondary Schools

Designed for students who plan to teach biology, chemistry, earth science, general science, or physics in junior high, middle, or secondary schools.

Preparation for Course

P: 35 credits of science.

Cr. 3.

EDUC P253 - Educational Psychology for Secondary Teachers

The application of psychological concepts to school learning and teaching in the perspective of development from preadolescence through adolescence. Special attention is devoted to the needs of the handicapped. Public school participation required.

Preparation for Course

P: P250.

Cr. 1-4.

Credits: 3

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

Credits: 3

Student Teaching

- EDUC M501 - *Portfolio* Cr. 0

EDUC M470 - Practicum

Teaching or experience under the direction of an identified supervising teacher with university-provided supervision in the endorsement or minor area, and at the level appropriate to the area, and in an accredited school within the State of Indiana unless the integral program includes experience in an approved and accredited out-of-state site. The practicum may be full or part time. The amount of credit granted will be commensurate with the amount of time spent in the instructional meeting.

Cr. 3-8.

Variable Title

(V.T.)

Notes

Grade: S or F.

(recommended for Middle School Endorsement area)

Credits: 4

EDUC M480 - Student Teaching in the Secondary School

Students assume, under the direction of the supervising teacher, responsibility for teaching in their subject-matter area in a public school in the state.

Cr. 1-16.

Notes

Additional fee.

Credits: 12

Additional Credits: 93

Physical Science Teaching Certification Minor

Program: Minor

Department of Chemistry

College of Arts and Sciences

Science Building 496 ~ 260-481-6289 ~ www.ipfw.edu/chem

If you are already licensed or qualified to be licensed in another secondary area, you may earn a physical science teaching minor by completing the following 62 credits with a grade of C or better in each course.

Program Requirements

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry;

atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Total Credits: 62

Physical Science Teaching Certification-Physics

Students who wish to earn physical science teaching certification should complete the requirements for the B.S. with a major in physics teaching with the following adjustments. In addition, the Praxis II Specialty Area Exam in both physics and chemistry must be completed before or during the student teaching semester, normally in your senior year.

- Will reason about physically significant problems conceptually and mathematically
- Will solve complex physical problems using sophisticated mathematical techniques
- Will interpret mathematical solutions conceptually and physically
- Will use computation and computer modeling to investigate physical phenomena and solve physical problems
- Will communicate in appropriate scientific media and forms
- Will be aware of student conceptual difficulties in learning physics
- Will be aware of effective teaching techniques for physics
- Will be aware of appropriate physics laboratory methods
- Will be aware of effective teaching techniques for chemistry
- Will be aware of appropriate chemistry laboratory methods

Core and Concentration (Major) Courses (Credits: 35)

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 331 - Electricity and Magnetism II

Applications of Maxwell's equations to electromagnetic waves, boundaries, dispersion, and radiation.

Preparation for Course

P: 330.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 345 - Optics Laboratory I

Laboratory experiments in geometrical and physical optics and spectrometry.

Preparation for Course

C: 322.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 346 - Advanced Laboratory I

Experiments in atomic, molecular, solid state, and nuclear physics, electricity and magnetism, and physical optics. Students will have the opportunity to work intensively on a particular experiment.

Preparation for Course

P: 343.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 515 - Thermal and Statistical Physics

Equilibrium states, the concept of heat, and the laws of thermodynamics; the existence and properties of the entropy; different thermodynamic potentials and their uses; phase diagrams; introduction to statistical mechanics and its relation to thermodynamics; treatment of ideal gases.

Preparation for Course

P: PHYS 310, 330 and a course in differential equations or advanced calculus.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

PHYS 550 - Introduction to Quantum Mechanics

Brief historical survey of the development of quantum mechanics; waves in classical physics; wavepackets; uncertainty principle; wave functions; operators; expectation values of dynamical observables; Schrodinger equation; application of Schrodinger equation to one-dimensional problems; the hydrogen atom; electron spin; periodic table; and selected topics in perturbation theory, scattering theory, and compounding of angular moments.

Preparation for Course

P: PHYS 342 and at least one other junior-level course in each of mathematics and physics (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Undergraduate-Graduate

Supporting Courses (Credits: 44)**CHM 115 - General Chemistry**

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 321 - Analytical Chemistry I

Required of students majoring in chemistry. Quantitative measurements on complex chemical systems that show matrix effects or require isolation of a compound prior to its determination; general approaches to quantitative problems at the trace level; critical comparisons of competitive procedures with emphasis upon principles of separation process, including chromatography; recognition and evaluation of possible sources of error; approaches for optimizing conditions so as to minimize time and/or effort required to attain prescribed levels of accuracy and precision.

Preparation for Course

P: chm 218 and one year of organic chemistry.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 363 - Differential Equations

First order differential equations, higher order linear differential equations, systems of first order equations, series solutions, integral transforms, introduction to partial differential equations: separation of variables, Fourier series, Sturm-Liouville equations.

Preparation for Course

P: MA 261 or 263, and 351 with grades of C- or better.

Cr. 3.

Political Science (Social Studies) Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.A. with a major in political science and all requirements for teacher certification. Full information on teacher certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II Specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Notes

Neither Y398 (Internship in Urban Institutions) nor Y482 (Practicum) may count for more than 6 credits for the major; these two courses together may not count for more than 9 credits for the major.

Secondary Education Teaching Minor

Program: Minor

Department of Educational Studies

School of Education

In addition to the content area teaching majors, students can also obtain a teaching minor in one or more of the following areas:

Chemistry Teaching Minor (35 credits)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 218 - Introduction to Inorganic Chemistry

Descriptive inorganic chemistry of the elements including structure and bonding of inorganic materials, acid-base theory, oxidation-reduction, and coordination chemistry.

Preparation for Course

P: CHM 116 and MA 165 or 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 371 - Physical Chemistry

An introductory course in physical chemistry. Not open to chemistry majors, but suitable for other science majors. Topics to be covered include states of matter, thermodynamics, physical equilibrium, solutions, chemical equilibria, quantum mechanics, spectroscopy, and kinetics.

Preparation for Course

P: CHM 116 and MA 229.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Earth and Space Science Teaching Minor (27–28 credits)

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

GEOL G221 - Introductory Mineralogy

Crystallography, symmetry, and the crystal classes of minerals. Structure and physical and chemical characteristics of selected mineral groups. Phase diagrams and interpretation of mineral assemblages. Identification of common and important minerals using physical properties and simple chemical tests.

Preparation for Course

P: G100; C: CHM 115, (or equivalent), or written consent of instructor.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Credits: 3

GEOL G222 - Introduction to Petrology

Classification and identification of igneous, metamorphic, and sedimentary rocks. Genesis and tectonic significance of important igneous and metamorphic suites. Introduction to the use of the petrographic microscope. Four-day field trip.

Preparation for Course

P: GEOL G221.

Cr. 3-4.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G420 - Regional Geology Field Trip

Field investigation of selected regions of North America for study of mineralogic, lithologic, stratigraphic, structural, paleontologic, geomorphological, or other geological relationships. Six to fifteen days in the field.

Preparation for Course

C: G100 and written consent of instructor.

Cr. 1-2.

Session Indicators

(spring)

Variable Title

(V.T.)

Notes

May be repeated. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

Credits: 2

One of the following: Credits: 3-4

GEOG G107 - Physical Systems of the Environment

Physical characteristics of earth's surface and their interrelations. Landforms, vegetation, soils, weather, climate.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Session Indicators

(fall, spring)

GEOL G100 - General Geology

Survey of physical geology and introduction to historical geology. Elements of crystallography, mineralogy, petrology, geomorphology, seismology, structural geology, paleontology, historical geology, and plate tectonics. Optional Saturday field trip. Honors version is S100. Credit given for only one of the following: G100, S100, G103.

Cr. 3-5.

Hours

Class 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

GEOL L100 - General Geology Laboratory

Laboratory studies to accompany G100, G210, GEOG G107, or AST A100. Study of crystals, minerals, rocks, fossils, and earth structures from hand specimens and models. Interpretation of landforms and earth history from topographic and geologic maps.

Cr. 1-2.

Hours

Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

GEOL G104 - Earth Science: Evolution of the Earth

History of geology. Principles of interpretation of earth history. Geologic age dating, correlation, facies analysis, study of geosynclines, and plate tectonics as applied to reconstructing geological events. History of plant and animal life.

Preparation for Course

R: G100.

Cr. 3.

Hours

Class 2, Lab. 2-3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G211 - Introduction to Paleobiology

Processes of fossilization; techniques of fossil preparation and methods of taxonomic description; principles of evolution and distribution of life forms; principles of paleoecology and biostratigraphy. One two-hour laboratory per week; one weekend field trip required for geology majors.

Preparation for Course

P: G100 or G104, (or equivalent), or written consent of instructor.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

One of the following: Credits: 3

GEOG G315 - Environmental Conservation

Conservation of natural resources including soil, water, wildlife, and forests as interrelated components of the environment, emphasizing an ecological approach. Current problems relating to environmental quality. This course satisfies conservation requirement for teachers.

Preparation for Course

P: two college-level science courses including G107 or GEOL G100 or G103; or written consent of instructor.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

GEOL G300 - Environmental and Urban Geology

Significance of regional and local geologic features and processes in land use. Use of geologic factors to reduce conflict in utilization of mineral and water resources and damage from geologic hazards. Field trips.

Preparation for Course

P: two college-level science courses, including G100 or G103 or GEOG G107, or written consent of instructor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

GEOL G415 - Geomorphology

Geomorphic processes, evolution and classification of landforms. Laboratory: interpretation of topographic and geologic maps and aerial photographs.

Preparation for Course

P: G222 or consent of instructor.

Cr. 3-4.

Hours

Class 2-3, Lab. 0-4,

Notes

Field trips. If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Dual Level Course

Eligible for graduate credit.

French Teaching Minor (34 credits)

- FREN F3xx-4xx - Language elective (300–400 level) Credits: 3
- FREN F3xx-4xx - Literature elective (300–400 level) Credits: 3
- FREN F216 - Second-Year French Conversation Credits: 2

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112: FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F213 - Second-Year French Composition

This course integrates the four language skills into a structured approach to composition. Review of selected points of French grammar will be included. Weekly compositions will treat topics both creative and expository and increase in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, stylistic control.

Preparation for Course

P: F203.

Cr. 2.

Notes

Students are encouraged to enroll in W300 (required for French majors) concurrently with enrollment in their first 300-level French literature course.

FREN F317 - French Language Skills I

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F318 - French Language Skills II

Advanced grammar, structures, composition, and conversation. Conducted in French.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3.

Notes

Required for teaching certification.

FREN F325 - Oral French for Teachers

Practice in diction and phonetic analysis. Study of idiomatic expressions, and intensive review of irregular verbs. Individual diagnosis of speech difficulties, with corrective exercises in audio laboratory. Some conversation and practice-teaching presentations.

Preparation for Course

P: FREN F204; R: F213.

Cr. 3-8.

Notes

May be repeated for a maximum of 8 credits.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

FREN F463 - Civilisation Francaise I

French civilization from medieval period through 17th century.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

FREN F464 - Civilisation Francaise II

French civilization from 18th century to contemporary period.

Preparation for Course

P: 6 credits in French at the 300 level or departmental permission.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

German Teaching Minor (32 credits)

- GER G3xx-4xxElectives (300–400 level) Credits: 9

GER G111 - Elementary German I

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance at lab required. G111 is a course for beginners. Students with two years of high school German must take G113.

GER G112 - Elementary German II

Introduction to German language as well as to cultures of German-speaking countries. Emphasis on development of communicative competence in speaking, listening, reading, and writing.

Preparation for Course

P: GER G111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Weekly attendance in lab required.

GER G203 - Second-Year German I

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for GER G203: G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 0.

Session Indicators

(fall)

GER G204 - Second-Year German II

Intensive review of important structural problems and vocabulary primarily through the reading and discussion of modern German fiction and nonfiction.

Preparation for Course

P: for G203: GER G112 or G113; P for GER G204: G203.

Cr. 3.

Hours

Lab. 1.

Session Indicators

(spring)

GER G318 - German Language Skills I

Composition, conversation, and diction; advanced grammar. Conducted in German.

Preparation for Course

P: GER G204.

Cr. 3-5.

GER G325 - German for Teachers

Intensive practice in conversation and diction, with individual corrective work. Use of the audio laboratory. Intended primarily for teachers but open to students who have completed G318 and preferably also G319. May be taken twice for maximum of 6 credits. Does not count toward master's degree. Required for teaching certification.

Preparation for Course

P: GER G204.

Cr. 3.

GER G463 - German Culture

Taught in German.

Preparation for Course

P: 6 credits of 300-level work or departmental permission.

Cr. 3.

GER G464 - Kultur Und Gesellschaft

The interaction of social, intellectual, and artistic forces in German life in the last one to two centuries, stressing interdisciplinary aspects.

Preparation for Course

P: GER G463.

Cr. 3.

One of the following: Credits: 3

- GER G3xx-4xxElectives (300–400 level) Credits: 9

GER G362 - Introduction to Contemporary Germany

An overview of contemporary West German civilization with attention to the other German-speaking countries. Political, economic, and social organization. Conducted in German.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

GER G363 - Deutsche Kulturgeschichte

A survey of the cultural history of German-speaking countries, as well as contemporary civilization, with an emphasis on individual aspects of culture traced through several epochs.

Preparation for Course

P: third-year German language proficiency or consent of instructor.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad Indiana

University or Purdue University students with an appropriate command of German may apply for a year's study, with full credit, in the IU program at the University of Freiburg; participation is not limited to German majors. The fourth or fifth semester of German may be taken during six weeks of full-time study abroad in the summer in Graz, Austria. Semester programs are available in Munich and Freiburg. For further information, consult the coordinator of overseas study programs, Office of International Programs.

Language Arts (English) Teaching Minor (24 credits)

- British literature elective Credits: 3
- American literature elective Credits: 3

EDUC X401 - Critical Reading in the Content Area

Aids elementary and secondary teachers in the development of instructional strategies that assist students in the comprehension, critical analysis, and integration of ideas presented in literature of various subject-matter areas. Public school participation required.

Cr. 1-3.

ENG L391 - Literature for Young Adults

Survey of representative literary works suitable for middle-school and high-school students. A variety of genres (poetry, mythology, science fiction and fantasy, historical fiction, realistic fiction, and contemporary problem books) will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and present, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

One of the following: Credits: 3

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

One of the following: Credits: 3

ENG L202 - Literary Interpretation

Close analysis of representative texts (poetry, drama, fiction) designed to develop art of lively, responsible reading through class discussion and writing of papers, including a documented research paper. Attention to literary design of critical method. May be repeated once for credit by special arrangement with Department of English and Linguistics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for use in fulfilling the writing requirement. Recommended prior to taking upper-level courses. If you are required by placement examination to take ENG R150, it is recommended that you complete that requirement before enrolling in any other English course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

One of the following: Credits: 3

COM 250 - Mass Communication and Society

A survey of print, broadcast, and film media in their relationship and influence on society. Study topics include mass communication theories, documentaries, commercialism, news media, media effects, and control, feedback, educational broadcasting, and audience analysis.

Cr. 3.

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

One of the following: Credits: 3

ENG G205 - Introduction to the English Language

Introduction to reasoning about English syntax and semantics.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

ENG G206 - Introduction to the Study of Grammar

Presents the basic principles of structural and transformational grammar: phonology, morphology, syntax, and semantics with comparative reference to traditional grammar. Required for advanced elementary education majors.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

LING L103 - Introduction to the Study of Language

Linguistics as a body of information; nature and function of language; relevance of linguistics to other disciplines, with reference to modern American English.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Life Science (Biology) Teaching Minor (29 credits)

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's

permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with

emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

Mathematics Teaching Minor (32 credits)**MA 153 - Algebra and Trigonometry I**

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 175 - Introductory Discrete Mathematics

Sets, logical inference, induction, recursion, counting principles, binary relations, vectors and matrices, graphs, algorithm analysis.

Preparation for Course

P: MA 165 or 153 and CS 160; or MA 153 and EET 264 with a grade of C- or better in each course.

Cr. 3.

MA 305 - Foundations of Higher Mathematics

Fundamental concepts used in higher courses, including logic and proof techniques, set theory, functions and relations, cardinality, number systems, the real numbers as a complete ordered field, and Epsilon-delta techniques.

Preparation for Course

P: MA 166 and 175 with a grade of C- or better.

Cr. 3.

MA 351 - Elementary Linear Algebra

Linear transformations, finite dimensional vector spaces, matrices, determinants, systems of linear equations, and applications to areas such as linear programming. Markov chains and differential equations.

Preparation for Course

P: two semesters of calculus with grades of C- or better.

Cr. 3.

MA 560 - Fundamental Concepts of Geometry

Foundations of Euclidean geometry, including a critique of Euclid's Elements and a detailed study of an axiom system such as that of Hilbert. Independence of the parallel axiom and introduction to non-Euclidean geometry.

Preparation for Course

P: MA 305.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

CS 160 - Introduction to Computer Science I

An introduction to the fundamental concepts and techniques of Computer Science. Students will learn to program using an object-oriented language. They will learn how to translate a real problem into a program description, and how to write and test a program to implement their description. The emphasis will be on developing a professional style at an elementary level. CS 160 will carry syntax as far as interacting classes, arrays of one dimension, and simple file i/o. Students with no programming background should instead consider CS 112.

Preparation for Course

P: MA 153.

Cr. 4.

MA 453 - Elements of Algebra

Fundamental properties of homomorphisms, groups, rings, integers, polynomials, fields.

Preparation for Course

P: MA 305 and MA 351 with grades of C- or better.

Cr. 3.

MA 575 - Graph Theory

Introduction to graph theory with applications.

Preparation for Course

P: MA 305 or 351.

Cr. 3.

Dual Level Course

Eligible for graduate credit.

One of the following: Credits: 3

STAT 511 - Statistical Methods

Descriptive statistics; elementary probability; sampling distributions; inference, testing hypotheses, and estimation; normal, binomial, Poisson, hypergeometric distributions; one-way analysis of variance; contingency tables; regression.

Preparation for Course

P: two semesters of calculus with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

STAT 516 - Basic Probability and Applications

A first course in probability intended to serve as a background for statistics and other applications. Sample spaces and axioms of probability, discrete and continuous random variables, conditional probability and Bayes' theorem, joint and conditional probability distributions, expectations, moments and moment generating functions, law of large numbers and central limit theorem. (The probability material in Course 1 of the Society of Actuaries and the Casualty Actuarial Society is covered by this course.)

Preparation for Course

P: MA 261 or MA 263 with a grade of C or higher.

Cr. 3.

Dual Level Course

Undergraduate-Graduate

Physical Science Teaching Minor (62 credits)

(This subject area can be used as a minor teaching area or as a certification-only teaching major.)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 224 - Introductory Quantitative Analysis

Introduction to titrimetric, gravimetric, and instrumental methods of analysis; principles of separation processes, including chromatography; recognition and evaluation of possible sources of error. Required of students majoring in biology who do not take CHM 321.

Preparation for Course

P: CHM 116.

Cr. 4.

Hours

Class 2, Lab. 6.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 322 - Optics

Wave optics and properties of light including reflection, refraction interference, Fraunhofer and Fresnel diffraction dispersion, polarization, double refraction, introduction to lasers and holography.

Preparation for Course

P: 251 (or equivalent).

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Physics Teaching Minor (46 credits)

- MA 262 - Linear Algebra and Differential Equations Credits: 4

EDUC Q400 - Man and Environment: Instructional Methods

For preservice and experienced teachers. Ideas on curriculum trends and instructional techniques coupled with current national and international topics in environmental education; new resource materials and related bibliographies. An examination of a holistic scheme for teaching/learning about the environment.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 261 - Multivariate Calculus

Solid analytic geometry, vector calculus, partial derivatives, and multiple integrals.

Preparation for Course

P: MA 166 with a grade of C- or better.

Cr. 4.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 310 - Intermediate Mechanics

Elements of vector algebra; statics of particles and rigid bodies; theory of couples; principle of virtual work; kinematics; dynamics of particles and rigid bodies; work, power, and energy.

Preparation for Course

P: MA 261 and two semesters of general physics; calculus.

Cr. 4.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 330 - Intermediate Electricity and Magnetism

Electrostatics; electric currents; magnetostatics; electromagnetic induction; Maxwell's equations; electromagnetic waves.

Preparation for Course

P: 251; C: MA 262.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 342 - Modern Physics

A survey of basic concepts and phenomena in atomic, nuclear, and solid-state physics.

Preparation for Course

P: 241 or 251 or 261.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 343 - Modern Physics Laboratory

Laboratory experiments to accompany PHYS 342.

Preparation for Course

C: 342.

Cr. 1.

Hours

Lab. 3,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Spanish Teaching Minor (38 credits)

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S275 - Hispanic Culture and Conversation

Practice of language skills through reading, writing, and discussion of Hispanic culture. Treats facets of popular culture, diversity of the Spanish-speaking world, and themes of social and political importance. Conducted in Spanish.

Cr. 3.

SPAN S301 - The Hispanic World I

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S302 - The Hispanic World II

Introduction to Hispanic culture through literature. Study of representative literary works of both Spain and Spanish America in the context of Hispanic history, art, philosophy, folklore, etc.

Preparation for Course

P: SPAN S275.

Cr. 3.

Session Indicators

(S301 fall; S302 spring)

SPAN S311 - Spanish Grammar

This course is designed to integrate the four basic language skills into a review of the major points of Spanish grammar. Course work will combine grammar exercises with brief controlled compositions based on a reading assignment and class discussion in Spanish. Sentence exercises will be corrected and discussed in class.

Preparation for Course

P: SPAN S275.

Cr. 3.

SPAN S312 - Written Composition in Spanish

This course integrates the four basic language skills into a structured approach to composition. Some review of selected points of Spanish grammar will be included. Each student will write a weekly composition, increasing in length as the semester progresses. Emphasis will be on correct usage, vocabulary building, and stylistic control.

Preparation for Course

P: SPAN S311.

Cr. 3.

SPAN S317 - Spanish Conversation and Diction

Intensive controlled conversation correlated with readings, reports, debates, and group discussions, with emphasis on vocabulary usage, word order, tense interrelationships, and discourse skills. May be repeated once for credit.

Preparation for Course

P: SPAN S275.

Cr. 3.

Hours

Class 4,

SPAN S488 - Spanish for Teachers

Open only to students completing teaching certification requirements. Focuses on major problem areas of teaching Spanish. Includes review, exercises, and information on current pedagogical trends.

Preparation for Course

P: SPAN S311-S312 or instructor permission.

Cr. 3.

One of the following: Credits: 3

SPAN S411 - Spain: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spain. Readings and discussions in Spanish.

Preparation for Course

P: S301-S302 or departmental permission.

Cr. 3.

Notes

In general, grades of Incomplete are not given in 100- and 200-level language courses. Study Abroad IPFW students with an appropriate command of Spanish may apply for a year's study, with full credit, in the IU programs at Madrid, Spain. Participation is not limited to Spanish majors. There are also semester programs in Spain (Alicante, Madrid, and Seville) and Chile (Santiago) and summer programs in Spain (Salamanca) and Mexico (Cuernavaca, Guanajuato, and Mexico City). For further information, consult the coordinator of overseas study programs, Office of International Programs.

Dual Level Course

Eligible for graduate credit.

SPAN S412 - Spanish America: The Cultural Context

A course to integrate historical, social, political, and cultural information about Spanish America.

Preparation for Course

P: SPAN S301-S302 or departmental permission.

Cr. 3.

Notes

Approved by Arts and Sciences for the Cultural Studies (Non-Western Culture) requirement.

Dual Level Course

Eligible for graduate credit.

SPAN S413 - Hispanic Culture in the U.S.

Integrates historical, racial, political and cultural information about Hispanics in the United States. Eligible for graduate credit.

Cr. 3.

Dual Level Course

Dual Level: Undergraduate-Graduate

Theatre Teaching Minor (24 credits)

- THTR electives Credits: 6

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following: Credits: 3

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Sociology (Social Studies) Teacher Certification

You may be certified as a teacher of social studies after fulfilling all requirements for the B.a. with a major in sociology and all requirements for teacher certification. Full information on teacher-certification requirements is available from the School of Education.

Prior to your junior year, the School of Education requires that you successfully complete EDUA F300, EDUC W200/M101, and EDUC K201 and the Pre-Professional Skills Test (PPST) before admission to the teacher education program. The PRAXIS II specialty Area Exam must be completed before or during the student-teaching semester, normally in your senior year.

Theatre Teaching Minor

Program: Minor

Department of Theatre

College of Visual and Performing Arts

Williams Theatre 128 ~ 260-481-6551 ~ www.ipfw.edu/vpa/theatre

A theatre-teaching minor may be earned by completing the following courses and earning a grade of C or better in each required theatre course:

Program Requirements

- Additional theatre course Credits: 6

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 138 - Acting I

Student experientially and analytically explores the foundation of the acting process based on Stanislavski's system. Emphasis is on developing the actor's ability to work moment-to-moment through the use of improvisational theatre games, scene work, and monologues. Areas covered include beginning voice and movement work, concentration, imagination, objectives, obstacles, and actions. Explorations culminate in the presentation of scenes and monologues. May be repeated for credit with consent of instructor.

Preparation for Course

P: THTR 134, or theatre major or consent of instructor.

Cr. 3.

Hours

Class 3, Lab. 1.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 261 - Introduction to Theatrical Design

An introduction to the principles and practices of contemporary theatrical design. Emphasis on the study and development of unified production theory and its practical application to the areas of theatrical design.

Cr. 3.

Hours

Class 3, Lab. 2.

THTR 284 - Textual Analysis

A study of dramatic structure: theme, form, style, genre, and characterization as applied to selected plays.

Cr. 3.

One of the following:

THTR 470 - Theatre and Society I

The study of theatre history, performance, and dramatic literature from the primitive eras through the Renaissance. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 284 or consent of instructor.

Cr. 3.

THTR 471 - Theatre and Society II

The study of theatre history, performance, and dramatic literature from 1660 to the present. Emphasis on the relationship of theatre to its society.

Preparation for Course

P: THTR 470.

Cr. 3.

Total Credits: 24

Transfer Program

Agriculture (A.S.)

Program: Transfer Program

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you can complete the first two years of most of the 47 Bachelor of Science programs in agriculture and forestry, the two-year preveterinary program, up to two semesters of the forestry and natural resources programs, two semesters of the preagricultural and biological engineering program, and three semesters of an associate degree program in agriculture. All agriculture degrees must be completed at the West Lafayette campus of Purdue University. The forestry and natural resources and preveterinary programs are listed alphabetically later in this part of the *Bulletin*.

All degree programs in agriculture provide balanced curricula in computer science, mathematics, physical sciences, biological sciences, communication, social sciences, humanities, international understanding or emphasis, and business, plus technical preparation in the selected area of specialization. These programs recognize the need for graduates who are prepared to function effectively in the highly technical world of modern agriculture.

The Purdue University School of Agriculture is one of the nation's highest-ranked and most-prestigious institutions of

agricultural teaching, research, extension, and international programs. The West Lafayette faculty annually prepares more than 2,000 undergraduate and 500 graduate students for careers in the world's food production and distribution systems.

The IPFW agriculture program coordinator will assist you with processing intercampus transfer forms and with arranging affiliation with the appropriate West Lafayette counseling coordinator for the degree program selected. For a listing of degree programs available and additional details about all programs, you should obtain a current Bulletin of the School of Agriculture from the IPFW agriculture dean's program coordinator.

The partial requirements stated below can be completed at IPFW and apply in most B.S. programs in agriculture. Because of professional objectives and accreditation requirements, significant variations exist in some programs such as agricultural and biological engineering, biochemistry, forestry and natural resources, and landscape architecture. Students selecting these options may be able to complete only one or two semesters at IPFW.

It is highly recommended that you keep in contact with the agriculture program coordinator to remain up to date on any changes in the course requirements and to make sure that the requirements of your particular major are being met.

The associate degree with a major in agriculture, which requires at least one semester of full-time study at the West Lafayette campus, helps students who must withdraw before they can finish a Bachelor of Science. You may take, at most, three semesters at IPFW. You may begin with the general course work for agriculture, preforestry, or preveterinary medicine. Within the program, you must complete a specialization in one of the following areas: agricultural economics, agricultural systems management, agronomy, animal sciences, general agriculture, or horticulture. You work out the details of your career (final) semester with the West Lafayette advisor for the specialization you select; it is desirable to establish contact with this advisor before your final semester at IPFW.

To receive the associate degree, you must:

1. Complete at least half the credits for the Bachelor of Science for your declared option (64–65 credits).
2. Earn a minimum graduation GPA of 2.00 or higher.
3. Limit the number of elective credits taken under the pass/not-pass option to 12.
4. Meet the minimum requirements listed below. For course selection at IPFW and assistance with transferring to the West Lafayette campus, you should see the agriculture program coordinator at IPFW.

The assumption is that you will begin with courses that apply to the requirements for general agriculture, preforestry, or preveterinary medicine described in this Bulletin, but if you later choose the A.S. alternative, you must meet the following minimum requirements:

Mathematics and Basic Sciences

- Credits in calculus or statistics Credits: 3
- Credits in other mathematics and basic sciences Credits: 12

Written and Oral Communication

- Credits in written communication Credits: 6
- Credits in oral communication Credits: 3

Broadening Electives

- Credits in economics Credits: 3
- Credits in humanities or social sciences Credits: 3

Departmental Requirements and Electives

- Credits in departmental requirements and electives, at least 18 of which must be earned in School of Agriculture courses Credits: 35

Total Credits: 65

Agriculture (B.S.)

Program: Transfer Programs

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you can complete the first two years of most of the 47 Bachelor of Science programs in agriculture and forestry, the two-year preveterinary program, up to two semesters of the forestry and natural resources programs, two semesters of the preagricultural and biological engineering program, and three semesters of an associate degree program in agriculture. All agriculture degrees must be completed at the West Lafayette campus of Purdue University. The forestry and natural resources and preveterinary programs are listed alphabetically later in this part of the *Bulletin*.

All degree programs in agriculture provide balanced curricula in computer science, mathematics, physical sciences, biological sciences, communication, social sciences, humanities, international understanding or emphasis, and business, plus technical preparation in the selected area of specialization. These programs recognize the need for graduates who are prepared to function effectively in the highly technical world of modern agriculture.

The Purdue University School of Agriculture is one of the nation's highest-ranked and most-prestigious institutions of agricultural teaching, research, extension, and international programs. The West Lafayette faculty annually prepares more than 2,000 undergraduate and 500 graduate students for careers in the world's food production and distribution systems.

The IPFW agriculture program coordinator will assist you with processing intercampus transfer forms and with arranging affiliation with the appropriate West Lafayette counseling coordinator for the degree program selected. For a listing of degree programs available and additional details about all programs, you should obtain a current Bulletin of the School of Agriculture from the IPFW agriculture dean's program coordinator.

The partial requirements stated below can be completed at IPFW and apply in most B.S. programs in agriculture. Because of professional objectives and accreditation requirements, significant variations exist in some programs such as agricultural and biological engineering, biochemistry, forestry and natural resources, and landscape architecture. Students selecting these options may be able to complete only one or two semesters at IPFW.

It is highly recommended that you keep in contact with the agriculture program coordinator to remain up to date on any changes in the course requirements and to make sure that the requirements of your particular major are being met.

You may complete the following courses at IPFW:

Mathematics and Basic Sciences

- Credits in computer science Credits: 3
- Additional credits in mathematics and basic science Credits: 5

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Written and Speech Communication

- Credits in an additional oral or written communication course Credits: 3
- Credits in English composition Credits: 6

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Broadening Electives

- Credits from an approved list of international emphasis electives Credits: 0–3
- Credits from the following social sciences: anthropology, economics, education (limited courses), political science, psychology, and sociology Credits: 3–12
- Credits from the following humanities: education (limited courses), English literature (limited courses), foreign language and literatures, history, philosophy, and fine arts Credits: 6–15

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

Agriculture Courses Offered at IPFW

(See your advisor about appropriate selections.)

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

ENTM 206 - General Applied Entomology

A general course on insect structure, function, biology, ecology, and population management. Designed with the ENTM 207 laboratory series for all agricultural students who want a basic course in entomology.

Cr. 2.

ENTM 207 - General Applied Entomology Laboratory

This laboratory series complements ENTM 206. Insect structures and function are studied as a basis for learning to identify insects and other arthropods.

Cr. 1.

Hours

Lab. 2,

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

HORT 101 - Fundamentals of Horticulture

Biology and technology involved in the production, storage, processing, and marketing of horticultural plants and products. Laboratories include experiments demonstrating both the theoretical and practical aspects of horticultural plant growth and development.

Cr. 3.

Hours

Class 2, Lab. 2,

Consumer and Family Sciences

Program: Transfer Program

College of Health and Human Services

Neff Hall 330 ~ 260-481-6562 ~ www.ipfw.edu/cfs

At IPFW, you may complete approximately two years toward the Bachelor of Science options offered by the College of Consumer and Family Sciences at the West Lafayette campus of Purdue University. Majors are in child development and family studies, consumer and family sciences education, foods and nutrition, and consumer sciences retailing.

These degree programs must be completed at West Lafayette. IPFW also offers a B.S. and an A.S. in hospitality areas (see description later in this section).

The details of your general-education requirements and the courses in your field of specialization are determined by your option selection. For this information, you should review the Bulletin of the Purdue University West Lafayette College of Consumer and Family Sciences, www.cfs.purdue.edu. Consult the IPFW Chair of Consumer and Family Sciences to select the appropriate courses for your B.S. option.

Cytotechnology

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/cytotechnology.shtml

At IPFW you may complete three years towards the Bachelor of Science in cytotechnology. You must apply and be admitted to the Cytotechnology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Cytotechnology is a medical laboratory specialty in which microscopic examinations are performed on cell samples from the human body.

Prerequisite Courses – Prior to entering IUPUI's Cytotechnology Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - Biology electives: microbiology, embryology, genetics, animal cell physiology, immunology, and cell biology. With the approval of IUPUI's cytotechnology program director other biology courses may be substituted. Students must earn a total of 25 credit hours in biology, including BIOL 109 or 119, BIOL 215, 216, and 3 upper level courses that include labs. Other electives: art appreciation, medical terminology, statistics, computer science/technology, supervision (OLS), medical microbiology, biochemistry, endocrinology, parasitology, virology, cytogenetics, organic chemistry, physics, and mathematics.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours – 90 These may be completed at IPFW.

Limitations of Course Work - Biology credits earned more than seven years before application must be updated by taking 3 additional credit hours related to cell biology within a period of time not to exceed 12 months before admission. Remedial courses will not fulfill prerequisite hours.

Class Size - Eight each fall semester

Criteria Used for Selection of Class - Cumulative grade point average, biology grade point average, interview

Application Deadline - December 1 of the year prior to desired entry

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained.

Minimum Specific Grade Point Average – 2.5 on a 4.0 scale for all biology course work. This requirement is applied at the time of program application and must be maintained.

Minimum Grade Requirement in a Stated Prerequisite Course – C (2.0 on a 4.0 scale)

Interview – Qualified applicants must participate in an interview. Interviews are conducted between November and January.

Technical Standards - See IUPUI Health Professions Programs policy.

Clinical Observation/Volunteer Experience - While such experience is not required, it is very helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3-5

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

or higher-level math course

Choose one of the following Credits: 4

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

Choose 3 of the following biology courses with labs Credits: 11-12

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 315 - Developmental Anatomy

Comparative study of the vertebrate embryology and adult anatomy of selected vertebrates, including humans.

Preparation for Course

P: BIOL 119 or 109.

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(spring)

BIOL 334 - Clinical Pathophysiology

A functional study of pathophysiology of major physiological systems of a human with special emphasis on clinical applications for baccalaureate nursing and allied health professionals. Major topics to be covered include fluid and electrolyte balance, medical genetics, and the pathophysiology of the cardiovascular, respiratory, digestive, hepatic, endocrine, immune, renal, and neural systems. Cannot be used as a group A or B elective for biology majors.

Preparation for Course

P: BIOL 203–204 or equivalent.

Cr. 4.

Session Indicators

(spring)

BIOL 537 - Immunobiology

Readings and discussion in the structural, cellular, and genetic basis of the immune response.

Preparation for Course

P: BIOL 437.

Cr. 3.

Session Indicators

(spring)

Dual Level Course

Undergraduate-Graduate

Or select

Cell Biology lecture and lab

BIOL 381 - Cell Biology

Details of cell structure and function, biochemical aspects of energy and information flow in eukaryotic and prokaryotic cells, cellular differentiation and function of specialized eukaryotic cells. Course open only to science majors.

Preparation for Course

P: BIOL 119. R: one semester of organic chemistry or permission of instructor.

Cr. 3.

Session Indicators

(fall)

BIOL 382 - Laboratory in Cell Biology

Experimental methods in cell biology with emphasis on biochemical methods for exploring cell structure and function. Cell division and differentiation will also be addressed.

Preparation for Course

C: BIOL 381.

Cr. 1.

Hours

Lab. 3.

Session Indicators

(fall)

Or select

Animal Physiology lecture and lab

Or select one of the following:

Microbiology

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

or

BIOL 437 - General Microbiology

An examination of microbial diversity that emphasizes the interrelationship between bacteria and their environments. Special emphasis is given to metabolic diversity, control of microbial growth and interactions of pathogenic microorganisms with their hosts. The laboratory is designed to complement the lecture and emphasizes pure culture techniques, isolation and identification of unknown organisms, measurement and control of microbial growth and studies of human commensal organisms.

Preparation for Course

P: BIOL 117 and 119 or equivalents; P or C: CHM 255.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Electives:

- Humanities elective: Cr. 3
- Social/Behavioral science electives preferably psychology and sociology: Cr. 6
- General electives to bring total credits to 90
- Total Credits: 90

Forestry and Natural Resources

Program: Transfer Program

College of Arts and Sciences

Admission

At IPFW you may complete credits toward one of the five majors — fisheries and aquatic sciences, forestry, natural resources, wildlife, and wood products manufacturing technology — offered by the Department of Forestry and Natural Resources. You must transfer to Purdue University West Lafayette campus for second-year courses in order to have prerequisites for the summer practicum between the sophomore and junior years. You are encouraged to contact a West Lafayette advisor to confirm course selections. The following courses encompass most of the first-year requirements of these majors.

Program Requirements

- Credits in one of the following humanities and social sciences: anthropology; economics; fine arts, music, and theatre (history and appreciation only); foreign language; history; literature; philosophy; political science; psychology; sociology; speech communication Credits: 6
- AGRY 255 - Soil Science Credits: 3

AGR 101 - Introduction to Agriculture and Purdue

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture; ethics; the impact of undergraduate course work, including the core curriculum, on scholarship and career preparation; and the challenges facing the food, agricultural, and natural resource systems. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students. Course meets during weeks 1-8.

Cr. 0.5.

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability,

sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Credits in English composition Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Total Credits: 48

Health Information Administration

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/health.shtml

At IPFW you may complete 55 credit hours toward the Bachelor of Science in health information administration. You must be admitted to the Health Information Administration Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. The professional program is offered via distance learning or classroom delivery. Graduates receive their degree from the IUPUI School of Informatics.

Overview - Health information professionals play a critical role in maintaining, collecting, interpreting, analyzing and protecting data that healthcare providers rely on for research and delivery of quality care.

Prerequisite Courses - Prior to entering IUPUI's Health Information Administration Program, the student must complete at least 56 prerequisite credit hours. All but six of the total prerequisite hours may be completed at IPFW. Two additional prerequisite courses (CSCI N207 and HIA M300) are taken online through IUPUI. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - General electives as needed to complete 61 credit hours. These electives may include management information systems, supervisory management, methods of employee training, computer sciences, research methods, interpersonal communications, Greek and Latin medical terms, and foreign languages.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours – 61 Fifty-five prerequisite hours may be completed at IPFW. Six prerequisite hours are offered online through IUPUI.

Limitations of Course Work - Remedial course work will not qualify as prerequisite credit hours.

Criteria Used for Selection of Class - Completion of prerequisite courses, grade point average, interview

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained. Grades in remedial courses are included in the cumulative grade point average.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale) in anatomy, physiology, computer science, analytic skills/quantitative methods, business administration, and organization/management. Prerequisite courses in anatomy, physiology, computer science, and statistics must be completed prior to enrollment in the program.

Interview - Qualified applicants must participate in an interview.

Clinical Observation/Volunteer Experience - While such experience is not required, it is helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You may also consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-7686 or by e-mail at mrondeau@iupui.edu. The most current program information is found at <http://informatics.iupui.edu/academics/health>.

At IPFW you may complete the following courses:

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

OLS 268 - Elements of Law

An introductory law course with a brief comparison of the American federal system and the parliamentary system of government; covering law with emphasis on judicial review, court jurisdiction and procedure generally, and basic law in particular.

Cr. 3.

OLS 280 - Computer Applications for Supervisors

Selection and use of microcomputer software tools for business, industrial, and technical applications. Representative tools include word processors, electronic mail, spreadsheets, graphics, database managers, computer-based training, project managers, telecommunications, and others.

Preparation for Course

P: CS 106 or approved substitute.

Cr. 3.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3

ENG W232 - Introduction to Business Writing

Designed for students pursuing business careers. Practice in clarity, correctness, organization, and audience adaptation in business letters, interoffice memos, and informal and formal reports. Some emphasis on business research methods, research design, collaborative writing, and oral communication.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Session Indicators

(fall, spring)

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

ENG W331 - Business and Administrative Writing

Emphasis on proposals, presentations, collaborative and individual reports needed within a business, administrative, or organizational setting. Students discover how the process and products of writing shape organizational culture by studying documents organizations use, from hiring to setting ethical standards, as they communicate both internally and globally.

Preparation for Course

P: ENG W233 or equivalent.

Cr. 3.

Choose one of the following Credits: 3

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing.

Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 240 - Statistical Methods for Biology

An introduction to the basic concepts and methods in a statistical analysis, with emphasis on applications in the life sciences. Descriptive statistics, discrete and continuous distributions, confidence interval estimation, hypothesis testing, and contingency tables.

Preparation for Course

P: MA 149 or MA 153 with a grade of C or higher.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

One of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and

methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

PHIL 326 - Business Ethics

Philosophic examination of such topics as morality and self-interest, freedom and coercion, distributive justice, limits of the law, moral and legal rights, fair equality of opportunity, justice between nations. These topics are seen from a new perspective when they are connected to discussions of fair wages and capitalism, legal constraints on manufacturers and advertisers, affirmative-action programs, environmentalism, and multinational corporations.

Cr. 3.

Choose one of the following Credits: 3

OLS 252 - Human Relations in Organizations

A survey of the concepts that provide a foundation for the understanding of individual and group behavior in organizations of work, with special emphasis on typical interpersonal and leadership relationships.

Cr. 3.

OLS 274 - Applied Leadership

Introduction to and overview of the fundamental concepts of leadership. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, relations with others, and personal development.

Cr. 3.

SPEA H371 - Human Resource Management in Healthcare Facilities

This course covers the function of management, which is concerned with the acquisition, development, and use of human resources in the field of healthcare delivery. Labor relations relating to healthcare delivery are also included.

Cr. 3.

Choose one of the following Credits: 3

CS 306 - Computers in Society

Case study analysis of the social impacts of computerization and networking. Topics include computer ethics, crime, privacy, security, reliability, and vulnerability. Other topics include cyberphilia, cyberphobia, censorship, depersonalization, disenfranchisement, automated decision making, artificial intelligence, cognitive science, and ergonomics. Students present projects applying these issues to today's environment.

Preparation for Course

C: junior class standing.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Electives Credits: 5

- Humanities elective: Cr. 3
- General elective: Cr. 2

Total Credits: 55

Two additional prerequisites for this program available online through IUPUI:

- CSCI N207 - Data Analysis Using Spreadsheets Cr. 3
- HIA M300 - Database Design for HIA Cr. 3

Journalism Transfer Program

Program: Transfer Program College of Arts and Sciences

Neff Hall 343 ~ 260-481-6685 ~ www.ipfw.edu/jour/

At IPFW, you may complete two years of course work toward the Bachelor of Arts offered by the Indiana University School of Journalism at both the Bloomington and Indianapolis campuses. While at IPFW, you may take courses in the fundamental-skills requirements in writing, mathematics, and foreign language; distribution requirements in arts and humanities, natural and mathematical sciences, and social and behavioral sciences; and a maximum of 12 credits in journalism core courses or electives.

Program Requirements

JOUR J200 - Reporting, Writing and Editing I

Small working seminar relating communication theory to practice in journalistic writing. Emphasis on narration, exposition, description, and argumentation. Development of skills in conceptualization, organization, gathering evidence, and effective presentation of articles for publication in various mass media. Required course for journalism majors and IPFW journalism minor.

Preparation for Course

P: ENG W131 or equivalent and typing ability of 35 words per minute.

Cr. 3.

Hours

Class 3, Lab. 0-1.

JOUR J210 - Visual Communication

Basic principles, theories, and history of channels of human communication other than written and spoken language; development of elementary skills and experimentation in producing nonverbal messages and combining nonverbal with verbal messages. Some darkroom lab activities. Adjustable camera required. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Hours

Class 2-3, Lab. 0-2.

JOUR J300 - Communications Law

History and philosophy of laws pertaining to free press and free speech. Censorship, libel, contempt, obscenity, right of privacy, copyright, government regulations, and business law affecting media operations. Stresses responsibilities and freedoms in a democratic communications system. Required course for journalism majors and IPFW journalism minor. Also required course for radio and television students.

Cr. 3.

One of following Credits: 3

JOUR C200 - Mass Communications

Survey of functions, responsibilities, and influence of various mass communications media. For nonmajors. Directed toward the consumer and critic of mass media in modern society. No credit for both COM 250 and JOUR C200.

Cr. 3.

JOUR J110 - Foundations of Journalism and Mass Communication

Survey of the institutions of journalism and mass communication, their philosophical foundations, history, processes, economic realities, and effects. Required course for journalism majors and IPFW journalism minor.

Cr. 3.

Total Credits: 12

Notes

Internships and special course approvals are arranged through the IPFW journalism coordinator. Scholarships are available for declared journalism majors for the freshman year at IPFW and for subsequent years throughout the IU system. Applications are available in January.

For further information about journalism requirements and opportunities at IPFW, consult the *Bulletin* of the IU School of Journalism and course descriptions appearing in this *Bulletin*.

Medical Imaging Technology

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahttp/programs/medical.shtml

At IPFW you may complete all but 32 credit hours toward the Bachelor of Science in medical imaging technology. You must apply and be admitted to the Medical Imaging Technology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - A medical imaging technologist is a skilled radiographer qualified to provide patient service in interventional procedures, computed tomography, magnetic resonance imaging, or ultrasonography.

Prerequisite Courses – Prior to entering IUPUI's Medical Imaging Technology Program, the student must complete the minimum prerequisites, which includes an Associate of Science in radiography or its equivalent. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Radiography - Students who earn an Associate of Science in radiography through IPFW will graduate with 60 credit hours in radiography. IUPUI allows entry to the medical imaging technology program with a minimum of 40 college credit hours in radiography.

Suggested Electives— Students must earn a total of 15 credit hours in physical and biological sciences. To complete a minimum of 122 credit hours of academic work for graduation, additional electives may be required.

IUPUI Admission Requirements

Class Size - Based on the availability of clinical education sites for each major area.

Criteria Used for Selection of Class - Evidence of registration by the American Registry of Radiologic Technologists (ARRT), cumulative GPA weighted 40%, essay weighted 20%, radiologic technology GPA weighted 20%, clinical radiologic technology GPA weighted 10%, science/math GPA weighted 10%.

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.8 on a 4.0 scale at the time of application. Grades from all college courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum cumulative grade point average.

Minimum Specific Grade Point Average – 3.0 on a 4.0 scale for all radiologic technology course work. 2.5 on a 4.0 scale for all physical and biological sciences.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Technical Standards - See IUPUI Health Professions Programs policy.

Interview - An interview is not required.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3**COM 114 - Fundamentals of Speech Communication**

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3**MA 153 - Algebra and Trigonometry I**

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3-4

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA

113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

Choose one of the following Credits: 1

Consult your advisor about satisfying this requirement.

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Electives To Be Taken Prior To Graduation Credits: 6

- Humanities elective: Cr. 3
- Social/Behavioral Science elective: Cr. 3

Radiography Professional Program Credits: 60

Total Credits: 93-102

Nuclear Medicine

**Transfer Opportunity to IUPUI
Student Success Center
College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahp/programs/nuclear.shtml

At IPFW you may complete two years toward the Bachelor of Science in nuclear medicine technology. You must apply and be admitted to the Nuclear Medicine Technology Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Nuclear medicine is a medical specialty in which the nuclear properties of radioactive materials are used for diagnosis and treatment of disease.

Prerequisite Courses - Prior to entering IUPUI's Nuclear Medicine Technology Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - Math/science elective: natural, mathematical or computer science, first aid, nature of cancer, and nutrition. IUPUI allows students to replace MA 153 and MA 154 with four credit hours of advanced calculus. Students must earn a total of 20 credit hours in physical and biological sciences.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours - 60 These may be completed at IPFW.

Class size - Seven each summer session II (late June).

Criteria Used for Selection of Class - Cumulative grade point average, mathematics and science grade point average, interview.

Application Deadline - November 15 of the year prior to desired entry.

Minimum Cumulative Grade Point Average - 2.8 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained. The grades from all college courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum cumulative grade point average.

Minimum Specific Grade Point Average - 2.5 on a 4.0 scale for life and physical science course work. This requirement is applied at the time of program application and must be maintained. The grades from all college life and physical sciences courses taken, including remedial courses and courses that do not meet prerequisite requirements, are considered when calculating the minimum specific grade point average.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale) or a composite grade for a two-course lecture/lab sequence.

Technical Standards - See IUPUI Health Professions Programs policy.

Interview - Qualified applicants must participate in an interview. Interviews are conducted in January or early February.

Clinical Observation - Applicants must observe in a nuclear medicine facility before the admission interview.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing.

Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 5-6

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Or select:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.
and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following sequences Credits: 6-8

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

and

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic

acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Or select:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.
and

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Choose one of the following Credits: 3-5

PHYS 131 - Concepts in Physics I

A nonmathematical course describing the concepts, language, methods, history, philosophy, and impact on society of physics. Topics include motion, electricity, light, relativity, and quantum physics with applications to areas such as the energy crisis and nuclear energy.

Cr. 3.

Hours

Class 2, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Electives:

- Humanities elective Cr. 3
- Social/Behavioral science elective Cr. 3
- Electives to bring total credits in physical and biological science to a minimum of 20
- General electives to bring total credits to 60
- **Total Credits: 60**

Occupational Therapy

Transfer Opportunity to IUPUI**Student Success Center****College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ <http://www.ipfw.edu/hhs/ahttp/programs/occupational.shtml>

The entry-to-practice degree for the occupational therapy profession is now the Master of Science in occupational therapy, a graduate degree. A baccalaureate degree is required to gain entry to the program. At IPFW you may earn any baccalaureate degree and then apply to the Occupational Therapy Program offered by the School of Health and Rehabilitation Sciences at Indiana University-Purdue University Indianapolis (IUPUI). Completion of a baccalaureate degree and prerequisites does not guarantee admission to the IUPUI program.

Overview - Occupational therapy is the health and rehabilitation profession that focuses on maximizing a person's ability to participate in life independently.

Prerequisite Courses - Prior to entering IUPUI's Occupational Therapy Program, students must complete specific prerequisite courses in addition to earning a baccalaureate degree. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Limitations on Course Work - Anatomy, physiology, and statistics prerequisites must be taken within seven years of entry.

Class size - 36

Criteria Used for Selection of Class - Cumulative grade point average (GPA) weighted 40%, prerequisite course work GPA weighted 60%. The total scores are then ranked.

Application Deadline - Applications are available online through IUPUI's occupational therapy website. Applications are accepted from August 1st through January 20th annually and are due in January of the year of desired entry. Program begins Summer Session II (late June).

Minimum Cumulative Grade Point Average - 3.0 on a 4.0 scale.

Minimum Prerequisite Grade Point Average - 3.0 on a 4.0 scale.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Application Policy - For applicants for whom English is not their native language, a minimum TOEFL score of 550 is required.

Technical Standards - Students are required to meet technical standards established by the School of Health and Rehabilitation Sciences. These standards are available from IUPUI upon request.

Clinical Observation - Students must observe occupational therapy practice in three settings for a total of 12 hours and present evidence of this experience. Therapists are often willing to let students observe or "shadow" them, but volunteering also meets this requirement. Students may obtain observation or volunteer hours at any facility that offers occupational therapy.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree. Contact: Student Enrollment Services Coordinator for the School of Health and Rehabilitation Sciences by calling (317)274-7238. The most current program information is found at http://www.shrs.iupui.edu/occupational_therapy/.

Your undergraduate program must include the following:

At IPFW you may complete the following courses:

At IPFW you may complete a prerequisite baccalaureate degree (see above) and must also complete the following courses:

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Choose one of the following Credits: 1-3

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Total Credits: 18-20

Paramedic Sciences

**Transfer Opportunity to IUPUI
Student Success Center
College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahp/programs/paramedic.shtml

At IPFW you may complete one year toward the Associate of Science in paramedic science. You must apply and be admitted to the Paramedic Science Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Paramedics provide care to emergency patients in pre-hospital settings. They determine the nature and extent of victims' emergencies, immobilize fractures, supply intravenous therapy, and provide other life-saving interventions for the victims of acute illness or injury.

Prerequisite Courses – Prior to entering IUPUI's Paramedic Science Program, the student must complete the minimum prerequisites. Exclusive of emergency medical technician (EMT) training, these prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Total Number of Prerequisite Credit Hours Exclusive of EMT Training - 23 These may be completed at IPFW. Twenty credit hours of prerequisites must be completed prior to entrance.

Limitations of Course Work - Remedial courses will not fulfill prerequisites or count as credit hours toward the degree.

Class Size - Ten students per cohort entering either spring or fall semester.

Criteria Used for Selection of Class - Grade point average, personal interview, EMT experience.

Application Deadline - October 1 of the year prior to desired spring semester entry. February 1 prior to desired fall semester entry.

Minimum Cumulative Grade Point Average - 2.3 on a 4.0 scale. This requirement is applied at the time of program application and must be maintained.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Certification Requirement - You must be an Indiana or nationally certified EMT with at least 20 hours of documented patient contact in an ambulance to apply to the program.

To Become an Emergency Medical Technologist - Take the EMT Basic Training (7.5 credit) course through Ivy Tech and pass the EMT credentialing exam or complete an EMT course through one of the many local hospitals or township fire departments and pass the EMT credentialing exam. For any questions regarding EMT course work at Ivy Tech Fort Wayne Campus, contact the Ivy Tech EMT Program Chair at (260)480-2087.

Technical Standards - See IUPUI Health Professions Programs policy.

Medical Requirements – All students are required to provide a current immunization record that indicates immunizations in hepatitis B, rubella, rubeola, mumps, PPD, tetanus, and chicken pox.

Interview - Qualified applicants must participate in an interview. Interviews are generally conducted in December for the spring cohort and March for the fall cohort.

Clinical Observation/Volunteer Experience - While such experience is not required, it is helpful in making a career choice.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

MA 113 - Intermediate Algebra

Rational equations, functions, graphs of lines, slope, equations of lines, systems of equations in two variables, absolute value equations and inequalities, distance formula and midpoint formula, radical expressions and equations, rational exponents, quadratic equations and functions and their graphs, applications, and exponential and logarithmic equations and functions and their graphs. No credit toward any degree at IPFW.

Preparation for Course

P: MA 109 with a grade of C- or better or placement by departmental exam.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Total Credits: 23

Physical Therapy**Transfer Opportunity to IUPUI****Student Success Center****College of Health and Human Services**

Neff Hall 120 ~ 260-481-4187 ~ www.ipfw.edu/hhs/ahtp/programs/physical.shtml

The entry-to-practice degree for the physical therapy profession is now the Doctor of Physical Therapy (D.P.T.), a graduate degree. A baccalaureate degree is required to gain entry to the program. At IPFW you may earn any baccalaureate degree and then apply to the Physical Therapy Program offered by the School of Health and

Rehabilitation Sciences (SHRS) at Indiana University-Purdue University Indianapolis (IUPUI). Completion of a baccalaureate degree and prerequisites does not guarantee admission to the IUPUI program.

Overview - As members of the healthcare team, physical therapists help restore clients to normal functioning of the musculoskeletal and other systems through interventions utilizing therapeutic exercise, physical agents, and assistive devices.

Prerequisite Courses - Prior to entering IUPUI's Physical Therapy Program, students must complete specific prerequisite courses in addition to earning a baccalaureate degree. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing. Listed credit hours are minimums.

IUPUI Admission Requirements

Limitations of Course Work - Prerequisite courses in human anatomy, human physiology, chemistry, physics, and statistics must be completed within seven years of entry. The levels of anatomy, physiology, chemistry, and physics courses must be appropriate for science majors.

Class Size - 36

Criteria Used for Selection of Class - Admission is competitive and decisions will be made based upon cumulative grade point average (GPA) weighted 50%, GRE verbal score weighted 50%, completion of personal essay, and 16 observation hours in two different settings recorded on Generic Abilities Form. The applicants with the highest undergraduate cumulative GPA and verbal GRE scores are offered places in the program, which begins the following fall semester. Applicants ranked 37 to 71 will be given the opportunity to be placed upon a wait list (minimum of 35 slots) and will be considered should a place in the program become available.

Application Deadline – Applications may be submitted beginning August 1 and must be postmarked October 15 of the year prior to desired entry. Applications postmarked after October 15 will not be considered and fees will not be refunded.

Minimum Cumulative Grade Point Average - 3.2 on a 4.0 scale.

Minimum Specific Grade Point Average - 3.2 on a 4.0 scale for math and science course work, which includes grades earned in chemistry, physics, human anatomy, human physiology, and statistics.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Minimum Scores on Graduate Record Examination - 450 on each of verbal and quantitative measures. Test dates for the GRE scores provided must be within seven years of entry.

Application Criteria and Policies - At the time of application, applicants must have completed prerequisites with two or less remaining. Applicants with one or two course prerequisites in progress apply for contingent admission to begin classes in fall semester of the following calendar year. In addition, the applicant's baccalaureate degree must be completed by June 1, immediately prior to fall entry. **NO WAIVERS OR EXCEPTIONS WILL BE GRANTED BY THE PHYSICAL THERAPY PROGRAM.** Applicants who have previously been admitted to an entry-level physical therapy educational program and who then voluntarily or involuntarily leave such a program will not be considered eligible for admission into the Indiana University DPT program. Applicants placed on the wait list who are not accommodated in the class will be considered for admission to the following year's class. They must reapply during the following year's cycle and will compete for entry with that year's application cohort. For applicants for whom English is not their native language, a minimum TOEFL score of 650 is required at time of application. This policy is waived if the applicant has received an undergraduate degree from an accredited school in the United States by the time of entrance into the program.

Cardiopulmonary Resuscitation (CPR) Certification - Students must successfully complete Health Care Professional Level CPR Certification prior to entrance into the program. Certification must be maintained throughout the duration of the program.

Medical Terminology Proficiency - Students must demonstrate proficiency in medical terminology prior to entering the professional program. Proficiency can be demonstrated through formal course work, on-line instruction with certificate of completion, or self-study with departmental examination. Students will also need to be competent writers.

Technical Standards - Students are required to meet technical standards established by the School of Health & Rehabilitation Sciences. These standards are available from IUPUI upon request.

Medical Requirements - Basic immunizations as determined by IUPUI's Student Health Services must be completed by the first day of classes. Students must demonstrate proof of health insurance prior to entry into the program and must maintain health insurance throughout their enrollment.

Clinical Observation/Volunteer Experience - Applicants must complete observational, volunteer, or other work experiences in both hospital inpatient and outpatient physical therapy settings. Each experience must be the equivalent of one day, 8 hours. Each experience must be of sufficient length of time to enable the supervising physical therapist to adequately complete the IU DPT Program's Generic Abilities Assessment Form included as part of the application portfolio.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree. Contact: Student Enrollment Services Coordinator for the School of Health & Rehabilitation Sciences by calling (317)274-7238. The most current program information is found at http://www.shrs.iupui.edu/physical_therapy/.

At IPFW you may complete the following courses:

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-

reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8-10

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 202 - General Physics II

Electricity and magnetism, geometrical and physical optics, quantum theory, introduction to concepts of relativity, atomic, and nuclear physics.

Preparation for Course

P: 201.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Or select

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

and

PHYS 219 - General Physics II

Electricity, light, and modern physics, primarily for technology students.

Preparation for Course

P: 218.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

Or select

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.
and

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following sequences Credits: 8

Human Anatomy and Physiology I and II

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select

Anatomy and Physiology I and II

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting

standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Electives:

Humanities/Social sciences electives: Cr. 6

Total prerequisite credits to be included in a baccalaureate degree
Credits: minimum 39

If you choose to satisfy the medical terminology proficiency through coursework, choose one of the following Credits: 1-3

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Prepharmacy

Program: Transfer Program

College of Arts and Sciences

Classroom-Medical Building 153 ~ 260-481-6160

Because the School of Pharmacy and Pharmacal Sciences at the Purdue University West Lafayette campus does not admit first- or second-year students, you must complete at least 64 credits in the two-year prepharmacy program and apply for admission to the school prior to Jan. 1 of the second year. To complete the prepharmacy program at IPFW, you should apply for admission as a prepharmacy student in the College of Arts and Sciences and complete the

requirements listed below. To be considered for admission to the West Lafayette program, you should have at least a B+ average for all courses. If you do not gain admission to the pharmacy school, you may transfer to another program at IPFW. A complete set of degree requirements is available from the School of Pharmacy at West Lafayette.

Program Requirements

- Credits in approved electives Credits: Cr. 9

BIOL 108 - Biology of Plants

Introduction to growth, functioning, structure, heredity, and diversity of plants and their interactions with the environment. Designed for agriculture and prepharmacy majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall)

BIOL 109 - Biology of Animals

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment. Designed for agriculture and prepharmacy majors and certain options in Allied Health.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(spring)

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Total Credits: 64

Preveterinary

Program: Transfer Program College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you may complete the four-semester preveterinary curriculum, which includes the minimum requirements for admission to the School of Veterinary Medicine at the West Lafayette campus of Purdue University.

If you do not gain admission to veterinary medicine, you may use the curriculum below as the basis for continued study toward a degree in the School of Agriculture at West Lafayette. Students should contact the agriculture dean's deputy early in their academic career to discuss degree options. By substitution of certain BIOL courses, you may pursue this option as a biology major and obtain the B.S. with a major in biology rather than in agriculture.

Program Requirements

You may complete the following courses at IPFW:

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 217 - Intermediate Ecology

Ecological principles of populations, communities, and ecosystems; interaction of biotic and abiotic factors regulating population and community structure; case studies, field studies, and simulation models of life history attributes, competition, predation, parasitism, and mutualism. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117 and 119 or equivalent.

Cr. 3.

Hours

Class 2, Lab. 3.

Session Indicators

(fall)

BIOL 218 - Genetics and Molecular Biology

The course will cover the principles of classical and molecular genetics. Mendelian inheritance, linkage, gene interaction and chromosomal aberrations, nucleic acids structure, gene function (replication, transcription, and translation), mutation and repair, regulation of gene expression, genetic engineering. The laboratory experiments include linkage mapping in *Drosophila*, allozyme variation in fish, DNA extraction, electrophoresis, restriction enzyme analysis, gene isolation by polymerase chain reaction (PCR). This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring, summer)

BIOL 219 - Principles of Functional Biology

This course will cover selected topics in both plant and animal physiology: photosynthesis, respiration, nutrition, solute and water transport, plant and animal hormones, neural control in animals, osmoregulation, and reproduction. Some laboratory time will be devoted to small-group discussions. This course is open only to science majors. Instructor's permission is required for non-biology majors.

Preparation for Course

P: BIOL 117, 119, and CHM 116 or permission of instructor.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall)

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

CHM 254 - Organic Chemistry Laboratory

Laboratory experiments to accompany CHM 255 illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

Preparation for Course

C: CHM 255.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 255 - Organic Chemistry

Recommended for biology majors and premedical students who do not take CHM 261. A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc., (b) general syntheses and reactions, and (c) a logical modern rationale for fundamental phenomena as supported by relative reaction rates, orientation effects, and stereochemistry.

Preparation for Course

P: CHM 116.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 256 - Organic Chemistry

An extension of CHM 255 to include various functional groups such as the carboxyl, carbonyl, amino, etc., and polyfunctional natural products including carbohydrates and peptides.

Preparation for Course

P: CHM 255.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 258 - Organic Chemistry Laboratory

A continuation of CHM 254 but emphasizing methods for identifying organic compounds, including simple "unknowns."

Preparation for Course

P: CHM 254; C: CHM 256.

Cr. 1.

Hours

Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 533 - Introductory Biochemistry

A rigorous one-semester introduction to biochemistry.

Preparation for Course

P: CHM 224 and 256 or equivalent.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Dual Level Course

Undergraduate-Graduate

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

VM 102 - Careers in Veterinary

Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession.

Cr. 1.

Notes

Pass/not pass basis.

Credits in an agriculture course Credits: 3

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

FNR 103 - Introduction to Environmental Conservation

Introduction to ecological principles, history of conservation, natural resource management, human impacts on the environment, and environmental ethics. For all students interested in an introductory natural resource/environmental science elective.

Cr. 3.

Credits in English composition Credits: 6

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

Credits from the following areas: Credits: 12

- Anthropology
- Communication
- Economics
- History
- Fine arts, music, and theatre (history and appreciation only)
- Foreign language
- Literature
- Philosophy
- Political science
- Psychology
- Sociology

Total Credits: 82

Preveterinary Technology

Program: Transfer Program

College of Arts and Sciences

Science Building G56 ~ 260-481-6304

At IPFW, you may complete the four-semester preveterinary curriculum, which includes the minimum requirements for admission into the baccalaureate degree program in veterinary technology at the West Lafayette campus of Purdue University.

Also available are the associate degree program and a distance learning Web-based instruction program for veterinary technology, both administered through Purdue University West Lafayette. For information concerning admission to these programs, please visit this Web site: <http://vet.vet.purdue.edu/vtdl/vtdlhome/>.

The distance-learning program leads to an associate degree from Purdue University while taking all required courses either at the IPFW campus, via distance learning and Web instruction, or in collaboration with local designated clinical mentors and/or veterinarians in the surrounding counties.

Program Requirements

You may complete the following courses for the baccalaureate and associate degree programs at IPFW:

- Nine credits for electives in the following areas: Credits: 9
anthropology, communication, economics, history, philosophy, political science, psychology, sociology

ANSC 101 - Animal Agriculture

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

Cr. 3.

ANSC 221 - Principles of Animal Nutrition

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals.

Preparation for Course

P: CHM 112 or equivalent.

Cr. 3.

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

CHM 111 - General Chemistry

A basic introduction to the principles of chemistry including matter and energy, nomenclature, measurement, atomic structure, nuclear chemistry, chemical bonding, stoichiometry, classification of chemical reactions, kinetics, equilibria, gas laws, liquids, and solids.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

CHM 112 - General Chemistry

A continuation of CHM 111: Solutions, acid/base chemistry, and a survey of organic chemistry and biochemistry including functional groups, nomenclature and reactions, amino acids, proteins, carbohydrates, lipids, and nucleic acids.

Preparation for Course

P: CHM 111.

Cr. 3.

Hours

Class 2, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

VM 102 - Careers in Veterinary

Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession.

Cr. 1.

Notes

Pass/not pass basis.

Total credits available for transfer to Purdue University Programs: 45

Radiation Therapy

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

At IPFW you may complete two years toward the Bachelor of Science in radiation therapy. You must apply and be admitted to the Radiation Therapy Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Non-radiographers and radiographers may apply to the program. Non-radiographers are those who are not registered in radiography by the American Registry of Radiologic Technologists or who have not completed a radiography program accredited by the Joint Review Committee on Education in Radiologic Technology. Entry and program requirements vary depending on radiography background. Completion of IPFW course work does not guarantee admission to the IUPUI program. Graduates receive their degree from the IU School of Medicine.

Overview - Radiation therapy involves the use of ionizing radiation for the treatment of benign and malignant tumors.

Prerequisite Courses - Prior to entering IUPUI's Radiation Therapy Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

Suggested Electives - The number of elective courses will differ for each student to complete a total of 50 credit hours of prerequisite course work. Additional electives may be required, before or during the professional program, to complete a minimum of 122 credit hours of academic course work for graduation.

IUPUI Admission Requirements

Criteria Used for Selection of Class - Admission to the Radiation Therapy Program is based on an admission index composed of cumulative grade point average, mathematics and science grade point average, prerequisite courses grade point average, interview.

Application Deadline - December 1 of the year prior to desired entry.

Minimum Prerequisite Grade Point Average - 2.5 on a 4.0 scale. This requirement is applied at the time of program application. Grades from remedial courses are not calculated in the grade point average of the prerequisite courses to determine the admission index.

Minimum Specific Grade Point Average - 2.3 on a 4.0 scale for math and science course work. This requirement is applied at the time of program application and must be maintained. Grades from remedial courses are not calculated in the mathematics and science grade point average to determine the admission index.

Minimum Grade Requirement in a Stated Prerequisite Course - C (2.0 on a 4.0 scale)

Interview - A personal interview is required. If the number of applications to the program far exceeds the number of positions available, the program's Admissions Committee reserves the right to limit the number of applicants to be interviewed to two times the number of positions available in the class. Interviews are conducted in January.

Clinical Observation - The student must observe in a radiation oncology facility prior to applying to the program.

Additional Non-Radiographer Admission Requirements

Class Size - Admits 12 Non-radiographers

Minimum Number of Prerequisite Credits - 50

Additional Radiographer Admission Requirements

Minimum Number of Prerequisite Credits - Satisfactory completion of general education and technical specialty requirements.

Minimum Specific Grade Point Average - 2.3 on a 4.0 scale for radiography course work.

Proof of Radiologic Technology Specialty - Applicants must supply evidence of registration in radiography by the ARRT or completion of a radiography program accredited by the Joint Review Committee on Education in Radiologic Technology, such as the Fort Wayne School of Radiography. The technical specialty area is complete for applicants who have completed an associate or baccalaureate degree in radiography.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 5-6

MA 159 - Precalculus

Algebra and trigonometry topics designed to prepare students for calculus.

Preparation for Course

P: MA 113 with a grade of B- or higher or placement by departmental exam.

Cr. 5.

Or select:

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

and

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Or select:

Computer Orientation

BUS K211 - Spreadsheets for Business

Orientation to spreadsheet design and use from end-user/manager perspective. Topics include cell addressing through macro development.

Preparation for Course

P: BUS K200 or successful completion of SBMS computer literacy placement test.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.
and

BUS K212 - Introduction to Database Management

Orientation to database design from end-user/manager perspective. The distinction between "flat-file" and "relational" database management systems is explored with the commercial software packages.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.
and

BUS K213 - Internet Literacy for Business

Provide conceptual foundations on Internet/WWW technologies, and creation and management of business Web sites. The hands-on topics include Web browsers, search engines, and creation and maintenance of business Web pages using popular Web authoring tools and HTML.

Preparation for Course

P: BUS K211.

Cr. 1.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Choose one of the following Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)
and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Choose one of the following Credits: 1-3

AHLT R185 - Medical Terminology

Introduction to origin and derivation of medical words as well as their meaning.

Cr. 1.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

NUR 106 - Medical Terminology

The study of the language of medicine, including word construction, definitions, spelling, and abbreviations; emphasis on speaking, reading, and writing skills.

Cr. 3.

Electives:

- Business electives: Cr. 6
- Humanities elective: Cr. 3
- Social/Behavioral science elective: Cr. 3
- General electives to bring total credits to 50
- **Total Credits: 50**

Respiratory Therapy

Transfer Opportunity to IUPUI

Student Success Center

College of Health and Human Services

Neff Hall 120 ~ 260-481-4187 ~ <http://www.ipfw.edu/hhs/ahttp/programs/respiratory.shtml>

At IPFW you may complete two years toward the Bachelor of Science in respiratory therapy. You must apply and be admitted to the Respiratory Therapy Program at Indiana University-Purdue University Indianapolis (IUPUI) to complete the degree. Completion of IPFW course work does not guarantee admission to the IUPUI program. The IUPUI respiratory therapy program is part of a hospital- and university-based consortium. Graduates receive their degree from the IU School of Medicine.

Overview - Respiratory therapists evaluate and treat patients with cardiopulmonary disorders and are actively involved in health promotion and disease prevention.

Prerequisite Courses - Prior to entering IUPUI's Respiratory Therapy Program, the student must complete the minimum prerequisites. These prerequisites may be completed at IPFW. Students should consult with an IPFW allied health sciences advisor for appropriate courses and semester sequencing.

IUPUI Admission Requirements

Total Number of Prerequisite Credits - 55 These may be completed at IPFW.

Class Size - Approximately 30 students in the consortium.

Application Deadline - January 1. Late applications will be considered on a space-available basis.

Minimum Cumulative Grade Point Average - 2.5 on a 4.0 scale - This requirement is applied at the time of program application and must be maintained.

Minimum Specific Grade Point Average - 2.0 on a 4.0 scale for math and science course work. This requirement is applied at the time of program application and must be maintained.

Cardiopulmonary Resuscitation (CPR) Certification - All students are required to complete instruction for adult, child, and infant CPR before entry into the program. This must be the Healthcare Provider CPR or CPR for the Professional Rescuer. These courses are offered for a fee through the American Heart Association and the American Red Cross.

Technical Standards - See IUPUI Health Professions Programs policy. All accepted students will be required to sign a statement certifying that they can meet the program's technical standards.

Medical Requirements - All students are required to complete a medical history and document a complete vaccination program once accepted into the respiratory therapy program.

Interview - Qualified applicants must participate in an interview.

Clinical Observation - Applicants must complete and document at least three hours of clinical observation with a respiratory therapist.

The details of your prerequisite course work should be discussed with an IPFW allied health sciences advisor. You are also encouraged to consult an advisor at the IUPUI campus to discuss the degree by calling (317)278-4752 or by e-mail at askhpp@iupui.edu. The most current program information is found at <http://msa.iusm.iu.edu/hpp/>.

At IPFW you may complete the following courses:

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, predentistry, premedicine, and prepharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry; atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ETCS 106 - Introduction to Computers

A general introduction to computers and their applications with emphasis on breadth of coverage. Computer system components, terminology, programming concepts, and representative applications. History of computing. Contemporary issues. Productivity tools such as spreadsheets, database, computer graphics and their applications. Course will not count toward a bachelor's degree in the computer science department.

Cr. 3.

Choose one of the following sequences Credits: 8

BIOL 203 - Human Anatomy and Physiology

One year high school biology and/or one year high school chemistry or equivalent. A survey of normal structure and function of the human organism. The human is treated as an open system with the capacity to transport material, transform energy, and maintain a homeostatic state. The capacities and limitations of the human to cope with changes in the environment are emphasized. All major systems of the human body and their functions are examined in relation to the living organism. Integrated into the study of the human organism are laboratory exercises that emphasize the essentials of human anatomy and physiology.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

and

BIOL 204 - Human Anatomy and Physiology

Continuation of BIOL 203.

Preparation for Course

P: BIOL 203.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Or select:

BIOL 215 - Basic Human Anatomy

Introduction to anatomy using cadavers and anatomical models for investigations. Emphasis is given to the interrelationships of bones, muscles, nerves, and blood vessels from a regional approach. Specifically designed for

students for whom BIOL 203-204 is not accepted.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 2, Lab. 4.

Session Indicators

(fall)

and

BIOL 216 - Basic Mammalian Physiology

Introduction to physiology emphasizing homeostasis and interrelationships of body functions, cells to systems. Includes selected functional anatomy. Specifically designed for students in IU Allied Health programs, nursing, and physical education for whom BIOL 203-204 is not accepted.

Preparation for Course

P: one semester of chemistry. R: BIOL 215.

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Choose one of the following Credits: 3

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 3

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 312 - Medical Ethics

A critical examination of various issues, such as abortion, euthanasia, the healthcare system, and experimentation on humans. Topics will be dealt with from medical, ethical, religious, and legal perspectives.

Cr. 3.

Choose one of the following Credits: 3

ECON E270 - Introduction to Statistical Theory in Economics and Business I

Describing populations and samples; introduction to inference, including confidence intervals and hypothesis testing; correlation and simple and multiple regression; Chi-square, nonparametric, test of independence. Uses a popular statistical package for demonstrating and solving statistical problems.

Preparation for Course

P: MA 229; sophomore class standing.

Cr. 3.

PSY 201 - Introduction to Statistics in Psychology

An introduction to the development and application of statistical, quantitative, and measurement techniques pertinent to the psychological sciences. Fundamental concepts of numerical assignment, sampling theory, distribution functions, experimental design, inferential procedures, and statistical control.

Preparation for Course

P: PSY 120 (or equivalent) and either STAT 125, MA 153 or MA 168 or placement at a higher level of mathematics.

Cr. 3.

Hours

Class 2, Lab. 2.

SOC S351 - Social Statistics

Introduction to statistics including measures of central tendency and dispersion, probability, statistical inference, hypothesis testing, regression, correlation, analysis of variance, and cross tabulation.

Preparation for Course

P: SOC S161; either MA 153 or MA 168 or placement at a higher level of mathematics; either ENG W233 or SOC S260 (or equivalent); or consent of instructor.

Cr. 3.

SPEA K300 - Statistical Techniques

An introduction to statistics. Nature of statistical data. Ordering and manipulation of data. Measures of central tendency and dispersion. Elementary probability. Concepts of statistical inference decision. Estimation and hypothesis testing. Special topics discussed may include regression and correlation, analysis of variance, nonparametric methods. Credit given for only one of the following: K300, ECON E270, SOC S351, POLS Y395, PSY 201, STAT 301.

Preparation for Course

P: MA 113 or equivalent; R: MA 213.

Cr. 3.

STAT 301 - Elementary Statistical Methods I

Not open to majors in mathematics or engineering. Credit should be allowed in no more than one of STAT 301 or 511. Introduction to statistical methods with applications to diverse fields. Emphasis on understanding and interpreting standard techniques. Data analysis for one and several variables, design of samples and experiments, basic probability, sampling distributions, confidence intervals and significance tests for means and proportions, correlation and regression. Software is used throughout.

Preparation for Course

P: MA 149 or MA 153 or MA 168 with a grade of C or higher.

Cr. 3.

Choose one of the following Credits: 3

EDUC P249 - Growth and Development in Early Childhood

Focuses on the cognitive, social, affective, and physical development of the child during the early years of life. The goal of understanding the growing child from multiple perspectives guides the study of theory and research on child development. Theoretical study is integrated with observations of, and experiences with, children in a way that increases the insights and competence of the teacher of young children. The unique developmental problems of special groups of children - handicapped, economically deprived, and minority groups - are addressed.

Cr. 3.

PSY 235 - Child Psychology

General principles of children's behavior and development from conception to adolescence, including sensory and motor development, and the basic psychological processes such as learning, motivation, and socialization. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

PSY 362 - Human Development II: Adolescence

A behavioristically oriented analysis of social, personality, and cognitive development in adolescence and youth.

Preparation for Course

P: Sophomore class standing and PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 367 - Adult Development and Aging

Theory and research on adult development from young adulthood through the elderly years. Course covers biological, cognitive, personality, and social issues. Topics include vocational choice, marriage, parenthood, the empty nest, menopause, memory and aging, retirement, widowhood, longevity, death and dying.

Preparation for Course

P: Sophomore class standing; PSY 235 or PSY 369; R: ENG W233.

Cr. 3.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

Choose one of the following Credits: 4-5

PHYS 201 - General Physics I

Newtonian mechanics, wave motion, heat, and thermodynamics. Application of physical principles to related scientific disciplines including life sciences.

Preparation for Course

P: college algebra and trigonometry.

Cr. 5.

Hours

Class 4, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 218 - General Physics

Mechanics, heat, and sound, primarily for technology students.

Preparation for Course

P: MA 150 or 151 or 153 and 154.

Cr. 4.

Hours

Class 3, Lab. 2,

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 3).

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

Electives:

- General electives to bring total credits to 55
- **Total Credits: 55**

TransferIN.net: Indiana Core Transfer Library

TransferIN.net: Indiana Core Transfer Library

What is the CTL?

Indiana is working to help you transfer college credits more easily. To enable students to connect college credits, Indiana has developed the Core Transfer Library (CTL) - a list of courses that will transfer among all Indiana public college and university campuses, assuming adequate grades.

Core Transfer Library courses will meet the general or free elective requirements of undergraduate degree programs, and most CTL courses will also count toward degree program requirements - if an equivalent course is taught at your new campus.

At the time of publication, the IPFW courses listed below have been approved as part of the CTL. Additional courses are being added. For complete and up-to-date information, visit www.transferIN.net.

Course List:

AST A100 - The Solar System

Celestial sphere, measurement of time, earth as a planet, moon, eclipses, planets and their satellites, comets, meteors, theories on origin of solar system.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100 - Introduction to the Biological World

Principles of biological organization from molecules through ecosystems. Emphasis on processes common to all organisms and on concepts related to problems of current importance. No credit towards a degree in IU Allied Health. Credit given for only one of the following: BIOL 100, BIOL 250, or BIOL N200.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 100L - Introduction to the Biological World Laboratory

Laboratory exercises and experiments that illustrate selected principles of biology.

Preparation for Course

P or C: BIOL 100.

Cr. 1.

Hours

Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BIOL 105 - Medical Terminology

Emphasis on learning the meanings of the more common word elements associated with medicine and applying that knowledge to define medical terms.

Cr. 1.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

BIOL 117 - Principles of Ecology and Evolution

Principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to vertebrates; an introduction to genetic, evolutionary, and ecological processes; population biology; community ecology; and behavior. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or above MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(fall, summer)

Notes

Indiana Core Transfer Library course.

BIOL 119 - Principles of Structure and Function

Introduction to the structure and function of biological organisms at the cellular and organismal levels. Principles of cell structure, function, and information; energy flow within cells; structure of function of plants and animals; integration of physiological processes; development of plants and animals. This course is open only to science majors. Instructor's permission required for non-biology majors.

Preparation for Course

P: placement at or MA 153 (or equivalent).

Cr. 4.

Hours

Class 3, Lab. 3.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

BIOL 220 - Microbiology for Allied Health Professionals

The biology of microorganisms (bacteria, viruses, fungi, protozoa, and algae) and their interactions with humans. Emphasis on microbes with medical and/or public health significance. Specific areas of study include characteristics, metabolism, and genetics of bacteria; host-parasite interactions; factors affecting human health and disease states; principles of disinfection and sterilization; epidemiology of infectious disease with emphasis on transmission, prevention, and treatment; and nosocomial infection risks and prevention. This course is designed for nursing and Allied Health students.

Preparation for Course

P: BIOL 203, CHM 104 or CHM 111.

Cr. 4.

Hours

Class 3, Lab. 2.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

BUS A201 - Principles of Financial Accounting

Introduction to concepts and issues of financial reporting for business entities; analysis and recording for business entities. Required for business majors and others who expect to take more than one semester of accounting.

Preparation for Course

P: sophomore class standing or permission of the department.

Cr. 3.

Notes

Enrollment in business (BUS) courses numbered 301 and above is restricted to students who meet established criteria (see business degrees section of Part 4). Students enrolled in programs other than business and economics may not enroll in business and economics courses that would encompass more than 25 percent of their degree programs.

Indiana Core Transfer Library course.

BUS W100 - Principles of Business Administration

An introduction to functional areas of business, tracing the evolution of business, business forms, the role of government and society, relationships between administrators and employees, ethical issues, and the globalization of world markets. Ideal for prebusiness students or students of any major desiring a basic understanding of business.

Cr. 3.

Notes

Indiana Core Transfer Library course.

CHM 104 - Living Chemistry

An introductory chemistry course that focuses upon the biomolecules of living systems. General chemistry topics include chemical bonds, solutions, acid/bases, and buffers. The study of organic chemistry is given as a preamble to the structure, function, and metabolism of biomolecules such as proteins, lipids, carbohydrates, and nucleic acids. No credit toward any chemistry degree or a chemistry minor. Not acceptable as a prerequisite for CHM 115.

Preparation for Course

P: MA 109 with a grade of C or better or placement at the level of MA 113 or higher.

Cr. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

CHM 115 - General Chemistry

Required of all students majoring in biology, chemistry, geology (B.S.), medical technology, physics, chemical and metallurgical engineering, pre dentistry, pre medicine, and pre pharmacy. Introduction to fundamental laws and principles of chemistry, including unit systems and unit conversions; precision evaluation; atomic theory; stoichiometry; symbols; formulas; equations; mass, mole, gas volume relationships; ideal gas law; thermochemistry;

atomic structure; chemical periodicity; chemical bonds and their relation to physical properties; properties of the liquid and solid states. Numerical problems and relationships are introduced wherever quantitative treatment is possible.

Preparation for Course

P: one year of high-school chemistry or CHM 111 with a grade of C or better taken in the previous four years; and MA 113 with a grade of C or better, or placement at the level of MA 153 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

Indiana Core Transfer course.

CHM 116 - General Chemistry

A development of the concepts introduced in CHM 115. Introduction to phase changes, vapor pressure, solutions and solubility; colligative properties. Introductory thermodynamic treatments of equilibrium conditions of oxidation-reduction, electrochemistry, complexation, and acids and bases. Kinetics of chemical change, simple rate laws and reaction mechanisms. Descriptive chemistry of the "representative" elements ("s" and "p" block elements) with emphasis on periodic relationships. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

Preparation for Course

P: CHM 115 with a grade of C or better. P or C: MA 154 or higher.

Cr. 4.

Hours

Class 3, Lab. 3.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library

COM 114 - Fundamentals of Speech Communication

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small-group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

Cr. 3.

Notes

Indiana Core Transfer Library course.

COM 212 - Approaches to the Study of Interpersonal Communication

A study of basic characteristics of human communication and the theoretical and practical implications of these characteristics for various forms of oral communication.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E200 - Fundamentals of Economics

Study of the basic institutions of market economy and the role they play in defining and pursuing economic goals in the U.S. economy. Emphasis is placed upon the effects of existing economic institutions, current economic policy alternatives as they affect both the individual and the society. No credit toward B.S. in business; no credit for both E200 and E201.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ECON E201 - Introduction to Microeconomics

An analysis of evolution of market structure using the analytical concepts of supply and demand, opportunity cost, and marginal analysis. Applications include a variety of concurrent microeconomic issues.

Preparation for Course

P: sophomore class standing and MA 153 or placement beyond MA 153.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ECON E202 - Introduction to Macroeconomics

Measurement and explanation of total economic performance; money and monetary and fiscal policy as an analytical core. Individual sections apply this core to a variety of current economic problems such as inflation, recession, and unemployment.

Preparation for Course

P: ECON E200 or E201.

Cr. 3.

Session Indicators

(spring, summer)

Notes

Indiana Core Transfer Library course.

ENG L101 - Western World Masterpieces I: Ancient to Renaissance

Literary masterpieces from Homer to Dante.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L102 - Western World Masterpieces II: Renaissance to Modern

Plays, poems, and fiction from the 16th century to the present, including works by Shakespeare, Ibsen, Shaw, Wordsworth, Whitman, Yeats, Dostoevsky, Faulkner, Hemingway.

Preparation for Course

P: placement at or above ENG W131 (or equivalent) and exemption from or completion of ENG R150.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Approved by Arts and Sciences for the Cultural Studies (Western Tradition) requirement.

Indiana Core Transfer Library course.

ENG L250 - American Literature Before 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L251 - American Literature Since 1865

An introductory survey of representative works with an emphasis on major writers.

Preparation for Course

P: ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG L390 - Children's Literature

Survey of a wide range (folk tales, fantasy, realistic fiction, poetry, and picture books) of literature for children from the early years to junior high school. Readings from the classics of previous centuries and from the best modern works will be treated from the literary-critical perspective, from which pedagogical conclusions follow. Intended for English majors, for the general student, for teachers past and future, and for parents and librarians.

Preparation for Course

P: ENG L202 or W233 or equivalent.

Cr. 3.

ENG W103 - Introductory Creative Writing

Introduction to the art of creative writing. Short assignments, independent work, and classroom discussion of the fundamentals of writing in several genres, including poetry and fiction.

Preparation for Course

P: placement at or above ENG W131 or equivalent.

Cr. 3.

Notes

Indiana Core Transfer Library course.

ENG W131 - Elementary Composition I

Practice in writing organized, well-developed, researched papers for a variety of purposes and audiences. Some analysis of prose style and structure.

Preparation for Course

P: self-placement in W131, or completion of W129 with a grade of C or better, or completion of the ESL composition sequence and recommendation of the ESL instructor.

Cr. 3.

Session Indicators

(fall, spring, summer)

Notes

Indiana Core Transfer Library course.

ENG W233 - Intermediate Expository Writing

Instruction and practice in producing researched and documented texts appropriate for public audiences. Emphasis on appropriate primary and secondary research methods, organization, writing style, and documentation.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better.

Cr. 3.

ENG W234 - Technical Report Writing

Instruction in preparing engineering and other technical proposals and reports, with an introduction to the use of graphics.

Preparation for Course

P: ENG W131, W135, or W140 with a grade of C or better and recommended sophomore standing.

Cr. 3.

FINA H101 - Art Appreciation

Objectives: to acquaint students with outstanding works of art and to provide an approach to appreciation through knowledge of purposes, techniques, form, and content. No credit toward a fine arts degree.

Cr. 3.

Session Indicators

(fall, spring)

Notes

Indiana Core Transfer Library course.

FINA H111 - Ancient and Medieval Art

A multi-cultural survey of art and art history from prehistoric times through the 14th century.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FINA H112 - Renaissance Through Modern Art

A multicultural survey of art and art history from the 14th century to the present.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FNN 303 - Essentials of Nutrition

Credit not given for both FNN 303 and 315. Basic nutrition and its application in meeting nutritional needs of all ages.

Cr. 3.

Notes

Indiana Core Transfer Library course.

FREN F111 - Elementary French I

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for FREN F112; FREN F111.

Cr. 4.

Hours

Class 4-4, Lab. 0-0.

Session Indicators

(fall)

Notes

Indiana Core Transfer Library course.

FREN F112 - Elementary French II

Introduction to French language as well as to French and francophone cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. F111 is a course for beginners. Students with two years of high school French must take F113.

Preparation for Course

P for F112: FREN F111.

Cr. 4.

Session Indicators

(spring)

Notes

Indiana Core Transfer Library course.

FREN F203 - Second-Year French I

Intensive review of grammar and development of vocabulary, reading, conversation, and writing skills. Reading and discussion of modern French fiction and nonfiction, some composition.

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Hours

Class 3-3, Lab. 0-0.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

FREN F204 - Second-Year French II

Preparation for Course

P for F203: FREN F112 or F113. P for F204: FREN F203.

Cr. 3.

Notes

Weekly attendance in audio laboratory required.

Indiana Core Transfer Library course.

GEOL G103 - Earth Science: Materials and Processes

Introduction to origin and classification of minerals and rocks. Relationships among rock types, rock structures, surficial geological processes of running water, sub-surface water, glaciation, wind, waves, tides, and landform evolution. Geologic time. Internal processes, vulcanism, plutonism. Plate tectonics. Two lectures and a laboratory each week. Credit given for only one of the following: G100, S100, G103.

Cr. 3.

Hours

Class 2, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See

information under Arts and Sciences (Part 3).

Indiana Core Transfer Library course.

HIST H105 - American History I

Colonial period, revolution, Confederation and Constitution, National period to 1877.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

HIST H106 - American History II

1877 to present. Political history forms framework with economic, social, cultural, and intellectual history interwoven. Introductions to historical literature, source material, and criticism. H105 is not a prerequisite for H106.

Cr. 3.

Session Indicators

(fall, spring, summer)

Variable Title

(V.T.)

Notes

Indiana Core Transfer Library course.

MA 153 - Algebra and Trigonometry I

Review of algebraic operations, factoring, exponents, radicals and rational exponents, and fractional expressions. Linear and quadratic equations and modeling, problem solving, and inequalities. Graphs of functions and transformations, including polynomial, rational, exponential, and logarithmic functions with applications.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 154 - Algebra and Trigonometry II

Trigonometric functions and graphs, vectors, complex numbers, conic sections, matrices, and sequences.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 165 - Analytic Geometry and Calculus I

Introduction to differential and integral calculus of one variable, with applications. Conic sections.

Preparation for Course

P: MA 154 or 159 with a grade of C- or better or placement by departmental exam.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 166 - Analytic Geometry and Calculus II

Continuation of MA 165. Vectors in two and three dimensions. Techniques of integration, infinite series, polar coordinates, surfaces in three dimensions.

Preparation for Course

P: MA 165 with a grade of C- or better.

Cr. 4.

Notes

Indiana Core Transfer Library course.

MA 168 - Mathematics for the Liberal Arts Student

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Preparation for Course

P: MA 113 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 213 - Finite Mathematics I

Basic logic, set theory. Elementary probability, Markov chains. Vectors, matrices, linear systems, elementary graph theory. Applications to finite models in the managerial, social, and life sciences; and computer science.

Preparation for Course

P: MA 149 or 153 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 229 - Calculus for the Managerial, Social, and Biological Sciences I

Differential and integral calculus of one variable. Applications to problems in business and the social and biological sciences.

Preparation for Course

P: MA 153 or 149 with a grade of C- or better or placement by departmental exam.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MA 230 - Calculus for the Managerial, Social, and Biological Sciences II

A continuation of 229 covering topics in elementary differential equations, calculus of functions of several variables, and infinite series.

Preparation for Course

P: MA 229 with a grade of C- or better.

Cr. 3.

Notes

Indiana Core Transfer Library course.

MUS Z101 - Music for the Listener

Introduction to the elements of music through the mode of listening and a historical survey of the way those elements have been used in various types of musical compositions. For non-music majors.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 111 - Ethics

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the relation of nonmoral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn from both contemporary and classical sources.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHIL 206 - Philosophy of Religion

This course encourages critical reflection on traditional and contemporary views about God and other religious ideas. Topics include arguments for God's existence, the problem of evil, understanding the divine attributes, miracles, religious pluralism, and life after death.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PHYS 152 - Mechanics

Statics, uniform, and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; properties of matter; simple harmonic and wave motion; sound.

Preparation for Course

C: MA 166.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 220 - General Physics

Mechanics, heat, and sound, for students not specializing in physics.

Preparation for Course

P: college algebra and trigonometry.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 221 - General Physics

Electricity, light and modern physics, for students not specializing in physics.

Preparation for Course

P: PHYS 220.

Cr. 4.

Hours

Class 3, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

PHYS 251 - Heat, Electricity, and Optics

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

Preparation for Course

P: PHYS 152; C: MA 261.

Cr. 5.

Hours

Class 4, Lab. 2.

Notes

If you are majoring in this discipline, you may want to consider the Science and Engineering Research Semester. See information under Arts and Sciences (Part 4).

Indiana Core Transfer Library course.

POLS Y103 - Introduction to American Politics

Introduction to the nature of government and the dynamics of American politics. Origin and nature of the American federal system and its present political party base. (fall, spring, summer)

Cr. 3.

Notes

Indiana Core Transfer Library course.

POLS Y109 - Introduction to International Relations

Causes of war, nature, and attributes of the state, imperialism, international law, national sovereignty, arbitration, adjudication, international organization, major international issues. Credit not given for both Y109 and Y219.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 120 - Elementary Psychology

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, abnormal behavior, attention, perception, learning, memory, and thinking.

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 240 - Introduction to Social Psychology

A broad survey of current knowledge about human social behavior. Topics covered include aggression, attraction and love, social influence, attitudes and attitude change, nonverbal communication, leadership, prejudice and discrimination, and application of social psychology to law, medicine, and other fields.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 350 - Abnormal Psychology

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

Preparation for Course

R: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 369 - Development Across the Lifespan

Considers theoretical, empirical, and methodological issues relevant to the study of human development from conception to death. Biological, cognitive, personality, and social aspects of development are covered. Credit not given for both PSY 235 and PSY 369.

Preparation for Course

P: PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

PSY 444 - Human Sexual Behavior

A survey of research in human sexuality with the primary focus at the social psychological level. Problems in sex research and theoretical issues will be considered.

Preparation for Course

P: Junior class standing and PSY 120 (or equivalent).

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S161 - Principles of Sociology

Nature of interpersonal relationships, societies, groups, communities, and institutional areas such as the family, politics, education, the economy, and religion. Includes social process operating within these areas; significance for problems of social change, and social stratification.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SOC S163 - Social Problems

Major social problems in areas such as the family, religion, economic order, crime, mental disorders, civil rights; racial, ethnic, and international tensions. Relation to structure and values of larger society. Although no prerequisite is required, it is strongly recommended that students have some previous social science course work and/or familiarity with basic sociological concepts and methodology.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S111 - Elementary Spanish I

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required. S111 is a course for beginners. Students with two years of high school Spanish must take S113.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S112 - Elementary Spanish II

Introduction to Spanish language as well as to Hispanic cultures. Emphasis on development of communicative competence in speaking, listening, reading, and writing. Weekly attendance at lab required.

Preparation for Course

P: SPAN S111.

Cr. 4.

Hours

Class 4, Lab. 0.

Notes

Indiana Core Transfer Library course.

SPAN S203 - Second-Year Spanish I

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings. Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPAN S204 - Second-Year Spanish II

Meets three hours a week. Continuation of S111-S112/S113 with grammar review and increased emphasis on communication skills. Reading and discussion in Spanish of contemporary literature, essays, and/or cultural readings.

Practice in composition.

Preparation for Course

P for S203: SPAN S112 or S113; P for S204: S203.

Cr. 3.

Notes

Indiana Core Transfer Library course.

SPEA J101 - The American Criminal Justice System

Introduction to the criminal justice system of the United States and its function in contemporary society.

Preparation for Course

P: The American Criminal Justice System is a prerequisite for all other criminal justice courses.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 134 - Fundamentals of Performance

An introduction to the art of acting as practiced in the world today.

Cr. 3.

Notes

Indiana Core Transfer Library course.

THTR 201 - Theatre Appreciation

Understanding and appreciation of the theatre's role in the modern world. Includes a seminar approach in discussion of the nature of theatre, critical analysis of drama, the actor, the director, design, and careers in the theatre. Also deals with professional, regional, community, and educational theatre. All discussions and work are related to current stage productions that students are required to attend.

Cr. 3.

Notes

Indiana Core Transfer Library course.

Other Programs

**Computer Engineering and Electrical Engineering (B.S.Cmp.E
& B.S.E.E Dual Degree)**

Programs: B.S.Cmp.E. & B.S.E.E.

Department of Engineering

College of Engineering, Technology, and Computer Science

Engineering, Technology, and Computer Science Building 327 ~ 260-481-6362 ~ www.engr.ipfw.edu

You may choose to complete a dual degree in Computer Engineering and Electrical Engineering by completing all of the requirements in both the B.S.Cmp.E. and the

B.S.E.E

. programs. With overlapping coursework, the dual degree requires 147 hours.

Academic Calendar

Click on a link to be taken to the entry below.

- 2008-2009 Academic Calendar
 - Fall Semester 2009
 - Spring Semester 2010
 - Summer Semester 2010
- 2010-2011 Academic Calendar
 - Fall Semester 2010
 - Spring Semester 2011
 - Summer Semester 2011

2009-2010 Academic Calendar

Fall Semester 2009

Monday, Aug. 24	<i>Classes Begin</i>
Friday, Sept. 4	<i>Classes Suspended at 4:30 p.m. (Labor Day Recess)</i>
Tuesday, Sept. 8	<i>Classes Resume</i>
Monday-Tuesday, Oct. 12-13	<i>Fall Recess</i>
Tuesday, Nov. 24	<i>Thanksgiving Recess Begins After Last Class</i>
Monday, Nov. 30	<i>Classes Resume</i>
Monday-Sunday, Dec. 14-20	<i>Final Exam Week/Last Week of Classes</i>

Spring Semester 2010

Monday, Dec. 21	<i>Spring Semester Begins</i>
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Winter Intersession

Monday, Dec. 21	<i>Classes Begin</i>
Thursday-Friday, Dec. 24-25	<i>Holiday Recess</i>
Monday, Dec. 28	<i>Classes Resume</i>
Thursday-Friday, Dec. 31-Jan. 1	<i>Holiday Recess</i>
Monday, Jan. 5	<i>Classes Resume</i>
Sunday, Jan. 10	<i>Classes End</i>

Spring Session

Monday, Jan. 11	<i>Classes Begin</i>
Monday, Jan. 18	<i>Martin Luther King Jr. Holiday</i>
Monday, March 8	<i>Spring Recess Begins</i>
Monday, March 15	<i>Classes Resume</i>
Friday, April 2	<i>Classes Suspended at 4:30 p.m.</i>
Monday, April 5	<i>Classes Resume</i>
Monday-Sunday, May 3-May 9	<i>Final Exam Week/ Last Week of Classes</i>
Wednesday, May 12	<i>Tentative Date of Commencement</i>

Summer Semester 2010

Monday, May 10	<i>Summer Semester Begins</i>
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Summer Session I

Monday, May 17	<i>Classes Begin</i>
Friday, May 21	<i>Classes Suspended at 4:30 p.m.</i>
Tuesday, May 25	<i>Classes Resume</i>
Friday, June 25	<i>Classes End</i>

Summer Session II

Monday, June 28	<i>Classes Begin</i>
Friday, July 2	<i>Classes Suspended at 4:30 p.m. (Independence Day Holiday Recess)</i>
Tuesday, July 6	<i>Classes Resume</i>
Friday, Aug. 6	<i>Classes End</i>

Summer Session Ends

Sunday, Aug. 22	<i>Summer Semester Ends</i>
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2010-2011 Academic Calendar

Fall Semester 2010

Monday, Aug. 23	<i>Classes Begin</i>
Friday, Sept. 3	<i>Classes Suspended at 4:30 p.m. (Labor Day Recess)</i>
Tuesday, Sept. 7	<i>Classes Resume</i>
Monday-Tuesday, Oct. 11 -12	<i>Fall Recess</i>

Tuesday, Nov. 23
Monday, Nov. 29
Monday-Sunday, Dec. 13-19

Thanksgiving Recess Begins After Last Class
Classes Resume
Final Exam Week/Last Week of Classes

Spring Semester 2011

Monday, Dec. 20

Spring Semester Begins

Winter Intersession

Monday, Dec. 20
Friday, Dec. 24
Monday, Dec. 27
Friday, Dec. 31
Monday, Jan. 3
Sunday, Jan. 9

Classes Begin
Holiday Recess
Classes Resume
Holiday Recess
Classes Resume
Classes End

Spring Session

Monday, Jan 10
Monday, Jan. 17
Monday, March 7
Monday, March 14
Friday, April 22
Monday, April 25
Monday-Sunday, May 2 - 8
Wednesday, May 11

Classes Begin
Martin Luther King Jr. Holiday
Spring Recess Begins
Classes Resume
Classes Suspended at 4:30 p.m.
Classes Resume
Final Exam Week/ Last Week of Classes
Tentative Date of Commencement

Summer Semester 2011

Monday, May 9

Summer Semester Begins

Summer Session I

Monday, May 16
Friday, May 27
Tuesday, May 31
Friday, June 24

Classes Begin
Classes Suspended at 4:30 p.m. (Memorial Day Recess)
Classes Resume
Classes End

Summer Session II

Monday, June 27

Classes Begin

Friday, July 1

Classes Suspended at 4:30 p.m. (Independence Day Holiday Recess)

Monday, July 4

Independence Day Holiday Observed

Tuesday, July 5

Classes Resume

Friday, Aug. 5

Classes End

Summer Session Ends

Sunday, Aug. 21

Summer Semester Ends