PURDUE UNIVERSITY FORT WAYNE | Department of Civil and Mechanical Engineering

Course	ME 48700 – Mechanical Engineering Design I
Cross-listed Course	ENGR 41000 – Interdisciplinary Engineering Design I
Type of Course	Required for ME program
Catalog Description	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.
Credits	3
Contact Hours	3
Prerequisite Courses	ME 32100 and ME 36900
Corequisite Courses	ME 32200
Prerequisites by Topics	Heat Transfer and Design of Machine Elements
Textbook	None
Course Objectives	To develop capabilities of students to solve real-life problems. Students have to apply knowledge from their previous course work to accomplish projects formulation to prototype evaluation.
Course Outcomes	Students who successfully complete this course will have demonstrated an ability to: 1. Formulate a problem statement. **(1, 2)** 2. Generate solutions (conceptual designs) using brainstorming technique. **(1, 2)** 3. Evaluate conceptual designs using well-defined criteria. **(1, 2)** 4. Obtain a final design including safety, economic, ethical, and engineering standard considerations. **(1, 2, 4)** 5. The ability to perform risk assessment of the design. **(2)** 6. The ability to apply any code/standard related to the design. **(2)** 7. Function within a team. **(5)** 8. Present his/her work both written and orally. **(3)**

Lecture Topics	1. Introduction, Capstone Senior Design Guidelines 2. Formulation of problem statement 3. Brainstorming and conceptual designs 4. Evaluation of conceptual designs 5. Detailed design 6. Discussion related to oral presentations 7. Oral presentations
Computer Usage	Medium
Laboratory Experience	None
Design Experience	High
Coordinator	Hosni Abu-Mulaweh, Ph.D.
Date	August 22, 2022