

Technical Elective Courses

Students must select at least three (3) courses from **Group 1** and may select at most one (1) course from **Group 2**.

	course #	course name	cr	pre & co-requisite
Group 1*	ME 42100	Heating and Air Conditioning I	3	P: ME 32100
	ME 42400	Design and Optimization of Thermal Systems	3	P: ME 30100, ME 32100
	ME 42700	Sustainable Energy Sources and Systems	3	P: ME 30100, ME 32100
	ME 43200	Manufacturing Processes	3	P: ME 30300
	ME 44500	Biomaterials	3	P: ME 30300, BIOL 20300
	ME 47100	Vibration Analysis	3	P: ME 25100
	ME 48000	Finite Element Analysis	3	C: ME 32100, ME 36900
	ME 50500	Intermediate Heat Transfer	3	P: ME 32100
	ME 54400	Modeling and Simulation of Mechanical Engineering Systems	3	P: graduate standing, or ME 30100, 32100, 33100, & 36900 with C or better
	ME 54500	Finite Element Analysis: Adv. Theory & App.	3	P: graduate standing or ME 48000
	ME 54600	CAD/CAM Theory and Advanced Application	3	P: graduate standing or ME 36100 with C or better
	ME 54700	Mechatronics, Robotics, and Automation	3	P: graduate standing or ME 36100 with C or better
	ME 55000	Advanced Stress Analysis	3	P: MA 36300, ME 25200, & ME 30300 with C or better
	ECE 48300	Digital Control Systems: Analysis and Design	3	P: ME 33100

* Other 5xxxx-level courses offered by the CME Department may be included in Group 1 with approval.

	course #	course name	cr	pre & co-requisite
Group 2*	ME 49800	Research in Mechanical Engineering	3	P: honors classification
	MET 33500	Basic Machining	3	P: ME 16000, ME 30300
	ECE 25500	Introduction to Electronic Analysis and Design	3	P: ECE 20100
	ECE 31000	Motor Engine Control	3	P: ECE 20100, PHYS 25100
	SE 52000	Engineering Economics	3	P: senior or graduate standing
	SE 53000	Systems Engineering Management	3	P: senior or graduate standing
	SE 55000	Advanced Manufacturing Systems & Processes	3	P: senior or graduate standing
	CS 32100	Computer Graphics	3	P: CS 26000 (or CS permission)
	CS 38400	Numerical Analysis	3	P: CS 16000, MA 16600
	MA 51000	Vector Calculus	3	P: MA 26100
	MA 51100	Linear Algebra with Applications	3	P: MA 35100
	MA 52300	Introduction to Partial Differential Equations	3	P: MA 26100, 36300
	MA 52500	Introduction to Complex Analysis	3	P: MA 26300, 44100, or 51000
	STAT 51100	Statistical Methods	3	P: 2 semesters of calculus
	CHM 37100	Physical Chemistry	3	P: CHM 11600
	PHYS 32200	Optics	3	P: PHYS 25100
	PHYS 34200	Modern Physics	3	P: PHYS 25100

* Other 5xxxx-level courses offered by the CME, Math, or Physics Departments may be included in Group 2 with approval.

For information about the combined BSME/MSE degree contact Dr. Hosni Abu-Mulaweh (mulaweh@pfw.edu).

For information about the Advanced Manufacturing Engineering Certificate or the Bio-Mechanical Engineering Certificate contact Dr. Don Mueller (don.mueller@pfw.edu).

Consult catalog.pfw.edu or pfw.edu/etcs/cme for more information.