

SPRING 2009 UW-Platteville Fox Valley Mechanical & Electrical Engineering Courses

ME 3040 <u>Engineering Materials</u> A study of metals, polymers and ceramics. Crystal structures, microstructures, molecular structures and imperfections. Relationship between structures and observed mechanical properties. Material failure. Pre-requisite: CHE 165 Corequisite: MEC 203	3 credits	Lec 1	TTh 7:30 – 9:18 PM	1847	Durkin, B.
ME 3300 <u>Fluid Dynamics</u> Fluid properties, fluid statics, fundamental equations of fluid motion, dimensional analysis, external flow and boundary layers, viscous flow in pipes, compressible flow. Corequisite: MEC 202 and ME 2630	3 credits	Lec 1	TTh 5:00 – 6:18 PM	1826	TBA
ME 3630 <u>Applied Thermodynamics</u> Thermodynamics of vapor and gas power cycles, air conditioning and refrigeration cycles. Ideal gas mixtures and psychrometrics. Combustion and reacting mixtures. Design projects. Prerequisite: ME 2630	2 credits	Lec 1	TTh 6:30 – 7:22 PM	1708	Bayraktar, T.
ME 3640 <u>Heat Transfer</u> One-and two-dimensional steady-state heat conduction, unsteady-state heat conduction, numerical methods in conduction heat transfer. Forced and free convection. Heat exchangers. Radiation shaper factor, radiation heat exchange, and shielding. Mass diffusion, convection mass transfer, permeability. Corequisite: ME 3300 Fluid Dynamics	3 credits	Lec 1	MW 6:00 – 7:18 PM	1826	Bayraktar, T.
ME 3730 <u>Mechanical Systems Design</u> Development of design process through team design projects and case studies. Design considerations including performance, manufacturing, and economic considerations. Use of computers for evaluation of alternatives. Fits and tolerances. Optimization. Prerequisite: ME 3330 Design of Machine Elements	2 credits	Lec 1	MW 4:30 – 5:52 PM	1826	Zampaloni, M.
ME 4310/4320 <u>Automatic Controls</u> The design of feedback control systems using root-locus, frequency-response, and state-space methods. The specification, analysis, and compensation of feedback systems. The laboratory experiments demonstrate practical applications of concepts. Cross Offering: EE 3310 Prerequisites: ME 3030 and GE 2930	3 credits	Lec 1	TTh 7:30 – 9:44 PM	1826	Popovich, S.
ME 4720 <u>Thermal Systems Lab.</u> Instrumentation and measurement techniques in thermal systems; verification of basic principles; laboratory tests on components of thermal systems; experimental approach for solving engineering problems; application of computer data acquisition and data processing. Prerequisites: ME 3630 and ME 3640 Corequisite: ME 3720	2 credits	Lec 1	MW 7:30 – 9:22 PM	1847	Bayraktar, T.
ME 4800 <u>Finite Element</u> Introduces the finite element. Emphasizes beam and frame analysis, plane stress, plane strain, axisymmetric and three-dimensional stress analysis. Includes field problems, such as heat transfer. Utilizes readily available finite element computer programs. Prerequisite: ME 3330 Design of Machine Element	3 credits	Lec 1	TTh 4:15 – 6:03 PM	1708	Zampaloni, M.
ME 4930 <u>Senior Design Project</u> Applications of creativity and synthesis. Simulation of engineering project environment. Integration of technical knowledge in an open-ended comprehensive design project. Oral and written reports. This course must be taken in the last semester of residence. Prerequisites: ME 3230, 3730, 3830, 4730	3 credits	Lec 1	T 6:15 – 7:25 Fr 4:15-6:40	1847	Zampaloni, M.
EE 4310 <u>Modern Control Systems</u> State space modeling of systems, solution of state equations, controllability and observability, Liapunov stability, minimum realization, and state feedback design. Pre: EE 3310	4 credits		MW 5:00-7:20	1847	Popovich, S.