ME 4141: Machine Design I

3 Credit Hours

Prerequisite: ENGR 3131 and Engineering Standing

The fundamentals of mechanical engineering design to analyze, design and /or select components which are commonly used in the design of complete mechanical systems for structural integrity, reliability, and cost considerations are detailed. The course focuses on static loading and fatigue failure of mechanical elements, including shafts and rolling-element bearings, bolted and permanent connections, springs, brakes, cylinders, gears and flexible elements.

ME 4201: Senior Design I

1 Credit Hours

Prerequisite: ME 3201, ME 3440, ME 4250 and Engineering Standing

Part 1 of a two-course senior design capstone project for mechanical engineering. Students will form teams, define design projects, and write a proposal. Students will also begin preparation for FE Exam.

ME 4202: Senior Design II

3 Credit Hours

Prerequisite: ME 4201, and ME 4141, and Engineering Standing

Part 2 of a two-course senior design capstone project for mechanical engineering. Synthesis and analysis of an open-ended mechanical engineering design project, including written and oral communication. Students will also be prepared to take the FE exam.

ME 4250: Computer Aided Engineering

3 Credit Hours

Prerequisite: EDG 1211, ENGR 3343, ENGR 3131 and Engineering Standing

This course introduces engineering software tools and techniques for computer modeling and simulation of mechanical components, products and systems. It introduces students to techniques common to various industries including biomedical, aviation, automobile, HVAC, etc. such as meshing and computer simulations based on finite element and computational fluid dynamics (finite volume) analyses.