

Engineering Courses

ENGR 1304 - Computer-Aided Design (CAD)

Hours: 3

This is an introductory course in computer-aided drafting/design. Students will be taught basic CAD commands, tools, multi-view drawing and dimensioning techniques.

ENGR 2301 - Statics

Hours: 3

General principles of mechanics; concurrent force systems; statics of particles; equivalent force/moment systems; centroids and center of gravity; equilibrium of rigid bodies; trusses, frames, internal forces in structural members; friction; second moments of areas. Prerequisites: PHYS 2425.

ENGR 2302 - Dynamics

Hours: 3

Kinematics and kinetics of individual particles and systems of particles utilizing Newton's Laws of Motion, the Principle of Work and Energy, and the Principle of Impulse and Momentum; steady and variable mass flow. Prerequisites: MATH 2414 with a minimum grade of C.

ENGR 2303 - Engineering Mechanics- Statics and Dynamics

Hours: 3

This course will focus on equilibrium of particles and rigid bodies; centroids and center of gravity; internal forces of trusses, frames, and machines; internal forces in structural members; friction; second moment of areas; kinematics and kinetics of individual and systems of particles; principles of work and energy, and impulse and momentum; steady and variable mass flow. Prerequisites: PHYS 2425 with a minimum grade of C.

ENGR 2304 - Computing for Engineers

Hours: 3

This course introduces students to the use of computational tools to solve engineering problems. Topics include: problem identification and formulation, computational programming techniques, data transformation and visualization, effective plotting, regression analysis, interpretation of results, team collaboration, and introductory machine learning. Students will solve problems using modern computational tools such as MATLAB, Python, or Excel. Prerequisites: MATH 2413 with a minimum grade of C.

ENGR 2308 - Engineering Economic Analysis

Hours: 3

Emphasizes the systematic evaluation of the costs and benefits associated with proposed technical projects. The student will be exposed to the concepts of the "time value of money" and the methods of discounted cash flow. Students are prepared to make decisions regarding money as capital within a technological or engineering environment. Prerequisites: ENGR 2304 for TMGT, CONE, and IE majors, EE 200 for EE majors with a minimum grade of C.

ENGR 102 - Introduction to Engineering

Hours: 3

An introduction to engineering with emphasis on development and design processes. Interpretation of product/customer specifications, concept development, engineering drawings, design for prototyping, and manufacturing will be introduced through a hands-on team-based engineering project design.

ENGR 110 - Introduction to Engineering and Technology

Hours: 3

This course provides a solid foundation in fundamental skills needed for freshmen and transfer students to academically succeed and professionally prepare them for challenges within the disciplines of Engineering and Technology Management. The project-based assignments will provide students with opportunities to apply mathematics to solve engineering problems, acquire team working skills, practice written and verbal communication skills, and enhance problem solving and design skills. Early understanding of these skills will assist students throughout their undergraduate experience. Prerequisites: MATH 2312 with a minimum grade of C, or concurrent enrollment.

ENGR 113 - Product Design and Development

Hours: 3

This course includes the study of product development and design processes and methods, including product specifications, concept development, engineering drawings, design for prototyping, and manufacturing.

ENGR 213 - Engineering Probability and Statistics

Hours: 3

This course covers the role of statistics in engineering, probability, discrete and continuous probability distributions, joint probability distributions, random sampling and data description, point estimation, statistical intervals. Prerequisites: MATH 2414 with a minimum grade of C or concurrent enrollment.

ENGR 411 - Engineering Management

Hours: 3

Techniques relating to managing engineering activities; project management with Pert/CPM; engineer's transition into management; engineering managerial functions; productivity assessment/improvement; managing the quality function and communications. Prerequisites: IE 471 with a minimum grade of C, or concurrent enrollment.

ENGR 490 - H Honors Thesis

Hours: 3

Honors Thesis. Three semester hours.

ENGR 491 - H Ind Honors Readings

Hours: 3

Individual Honors Readings. Three semester hours.