

Engineering (ENGR)

Courses

ENGR 121 Engineering Orientation (2 Hours)

This course explores career options in engineering through activities and guest speakers. Topics include engineering disciplines, professional responsibilities, academic and professional planning, the engineering design process, group projects and engineering challenges. The intent of this course is to introduce students to the engineering industry and the engineering problem-solving process, and to help each student make the best career decision.

ENGR 131 Engineering Graphics I:AutoCAD* (4 Hours)

Prerequisites or corequisites: MATH 130 or MATH 171 or MATH 172 or MATH 173 or MATH 241.

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The student will master graphics concepts using computer-aided drafting (CAD) software. Topics include 2-D and 3-D CAD commands; geometric construction; multi-view, orthographic projection; sectional views; isometrics; dimensioning; and descriptive geometry.

ENGR 251 Statics* (3 Hours)

Prerequisites : MATH 242.

Prerequisites or corequisites: PHYS 220.

This course introduces the student to the conditions of rest and motion of bodies under the action of forces. The principles used include vectors, force systems, equilibrium, free body diagrams, centroids, moments of inertia, trusses, frames, and shear and moment diagrams.

ENGR 254 Dynamics* (3 Hours)

Prerequisites : ENGR 251.

This course covers the application of the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum.

ENGR 284 Thermodynamics* (4 Hours)

Prerequisites : MATH 242 with a grade of "C" or higher and PHYS 220.

Topics include properties of a simple pure compressible substance, equations of state, the first law of thermodynamics, internal energy, enthalpy, specific heats, and the application of the first law to a system or a control volume. The second law of thermodynamics is also discussed including entropy as a property and its ramifications.