

# Engineering (ENGR)

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## Courses

### **ENGR 121 Engineering Orientation (2 Hours)**

Upon successful completion of this course, the student should be able to describe careers in engineering and use fundamental concepts in engineering problem solving. Topics include engineering disciplines, aptitude and academic requirements, professional responsibilities, problem definition and solution, engineering design, and terminology. Students will meet professional engineers during field trips to engineering companies and work sites. The primary intent of this course is to introduce students to 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 254H HON: Dynamics (1 Hour)**

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information. Prerequisite: Honors department approval.