

# ENGINEERING (ENGR)

---

**ENGR G101** **2 Units (36 lecture hours)**

## **Introduction to Engineering and Technology**

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

This course explores the branches of engineering, the functions of an engineer, and the industries in which engineers work. It explains the engineering education pathways and explores effective strategies for students to reach their full academic potential. It presents an introduction to the methods and tools of engineering problem solving and design including the interface of the engineer with society and engineering ethics. It develops communication skills pertinent to the engineering profession. Graded. **C-ID:** ENGR 110.

**ENGR G220** **4 Units (54 lecture hours; 54 lab hours)**

## **Programming and Problem-Solving in MATLAB**

**Prerequisite(s):** MATH G180.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

This course utilizes the MATLAB environment to provide students with a working knowledge of computer-based problem-solving methods relevant to science and engineering. It introduces the fundamentals of procedural and object-oriented programming, numerical analysis, and data structures. Examples and assignments in the course are drawn from practical applications in engineering, physics, and mathematics. Graded. **C-ID:** ENGR 220.

**ENGR G280** **3 Units (54 lecture hours)**

## **Statics**

**Prerequisite(s):** MATH G185 and PHYS G185.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

A first course in engineering mechanics: properties of forces, moments, couples and resultants; two- and three-dimensional force systems acting on engineering structures in equilibrium; analysis of trusses, and beams; distributed forces, shear and bending moment diagrams, center of gravity, centroids, friction, and area and mass moments of inertia. Optional additional topics include fluid statics, cables, Mohr's circle and virtual work. Graded. **C-ID:** ENGR 130.

**ENGR G285** **4 Units (54 lecture hours; 54 lab hours)**

## **Engineering Circuits**

**Prerequisite(s):** PHYS G280.

**Co-requisite(s):** MATH G285.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

This course explores an introduction to the analysis of electrical circuits, and use of analytical techniques based on the application of circuit laws and network theorems. Moreover, this course analyzes the DC and AC circuits containing resistors, capacitors, inductors, dependent sources, operational amplifiers, and/or switches. In addition, this course also explores natural and forced responses of first and second order RLC circuits, the use of phasors, AC power calculations, power transfer, and energy concepts. Graded. **C-ID:** ENGR 260; ENGR 260L.