

Engineering

Math & Science Division

Program Description

The field of engineering deals with the design, production, and testing of new products as well as maintaining and improving existing ones. Engineers are professionals who apply mathematical and scientific principles to solve technical problems.

Associate Degree

Not offered in this discipline.

ENGR 1 Introduction to Engineering (F-Day) <i>Course Advisories: Eligibility for enrollment in ENGL 1 and SCC minimum math standard. A first, non-technical course for engineering students and students considering majoring in engineering. Introduction to different engineering fields, the campus life of engineering students, schedule guidelines, opportunities in engineering, engineers' roles in society, ethics in engineering, and strategies and approaches required to survive math, science, and engineering courses. One hour lecture.</i>	1 Unit	ENGR 30 Engineering Mechanics: Statics (F-Day) <i>Prerequisites: MATH 21 and PHYS 6. Course Advisory: SCC minimum English standard. This course, which is required for engineering majors, presents a study of the principles of statics of particles and rigid bodies as applied to equilibrium problems of two and three-dimensional structures, and the principles of friction, virtual work, and stability of equilibrium. (CAN ENGR 8). Three hours lecture, one hour discussion.</i>	3 Units
ENGR 2 Engineering Graphics <i>Prerequisite: MATH 51 (Trigonometry). Course Advisory: SCC minimum English standard. A study of the principles of orthographic drawing and descriptive geometry with application using freehand drawing and computer-aided drafting, and graphical problem-solving including nomography, graphical mathematics, empirical equations, and presentation and analysis of engineering data. Two hours lecture, four hours lab.</i>	3 Units	ENGR 45 Properties of Materials <i>Prerequisites: PHYS 6 and CHEM 1. Course Advisory: SCC minimum English standard. This required course for engineering majors covers the application of basic principles of physics and chemistry to the structure and properties of engineering materials. Special emphasis is devoted to the relationship between microstructure and the mechanical properties of metals, polymers and ceramics, and the electrical, magnetic, and optical properties of materials. (CAN ENGR 4). Three hours lecture, three hours lab.</i>	4 Units
ENGR 17 Introduction To Electrical Engineering (S-Day) <i>Prerequisites: MATH 23 (may be taken concurrently) and PHYS 7. Course Advisory: SCC minimum English standard. Required for engineering majors, the course presents a study of basic circuit analysis techniques including Kirchhoff's laws, mesh-current, node-voltage, Thevenin and Norton equivalent; transient and steady-state responses of passive circuits; sinusoidal steady-state analysis; power calculations; operational amplifier; semiconductor devices. Weekly homework assignments and written tests, including a comprehensive final examination and lab reports, will be used to evaluate student success. Four hours lecture, three hours lab.</i>	4 Units		