ENGINEERING (ENGR)

ENGR 1020 - Introduction to Engineering & Technology
(3 Credits)
This course introduces students to various tools and problem solving skills common to most fields of engineering and technology. The course will emphasize developing both individual critical thinking, and collaborative problem solving skills, essential in today's world of technology. Students will learn the basics of the engineering design process of product design, testing and evaluation. As teams, students will apply this process to complete a semester-long project that will involve practical problem solving, computer simulation and physical product fabrication. To assist in the project analysis, documentation and presentation, students will develop skills with spreadsheets, word processing and presentation software.

Lecture: 2 hours, Lab: 2 hours

Prerequisite(s): MATH 0600 (may be taken concurrently) or MATH 0095 or MATH 0101 (may be taken concurrently) or MATH 0100 or Math Accuplacer or (Bachelor Degree or higher)

URI/RIC Transfer General Education Transfer Opportunity: Yes

ENGR 1030 - Engineering Graphics
(3 Credits)
This course studies the theory of orthographic projection and the principles of descriptive geometry. Students construct exact drawings of three-dimensional objects including auxiliary views, cross-sections, dimensioning, pictorial drawings and free-hand sketching.

Lecture: 2 hours, Lab: 2 hours

ENGR 2050 - Engineering Mechanics Statics
(3 Credits)
This is a basic course built around solutions and applications of Newton's laws of forces in equilibrium. Systems of particles and rigid bodies are studied using standard scalar and vector methods.

Lecture: 4 hours

Prerequisite(s): (MATH 1910 or MATH 2141)

ENGR 2060 - Engineering Mechanics Dynamics
(3 Credits)
This course covers the application of Newton's law of motion, to include kinematic and kinetic studies of the motion of systems of particles and rigid bodies, acted upon by unbalanced forces.

Lecture: 3 hours

Prerequisite(s): ENGR 2050 and (MATH 1920 or MATH 2142)

ENGR 2160 - Introduction to Engineering Analysis
(2 Credits)
This course introduces students to analytical methods employed in engineering problem solving using computer software.

Lecture: 3 hours

Prerequisite(s): MATH 1910 (may be taken concurrently) or MATH 2141 (may be taken concurrently)

URI/RIC Transfer General Education Transfer Opportunity: Yes

ENGR 2320 - Digital Electronics
(4 Credits)
This course studies logical building blocks and functional building blocks such as OR gates, AND gates, inventors, XOR gates, registers, counters, adders, D/A converters, A/D converters, decoders, encoders and binary multiplexers. Number systems and codes, arithmetic processes and memory devices are also covered. Input, output, memory, control and arithmetic functional units are developed using functional building-blocks. Note: Engineering students should consult department chair or academic advisor before enrolling.

Lecture: 3 hours, Lab: 3 hours

Prerequisite(s): MATH 2141 (may be taken concurrently)

ENGR 2520 - Microprocessor & Microcomputers
(4 Credits)
This hands-on course familiarizes students with computer and microprocessor software and hardware. Computer architecture and interfacing with input and output devices is studied. Students develop an understanding of how the computer is used to control electronic and mechanical devices.

Lecture: 3 hours, Lab: 3 hours

Prerequisite(s): MATH 2141 (may be taken concurrently) or MATH 1910 (may be taken concurrently)

ENGR 2540 - Mechanics of Materials for Engineering
(3 Credits)
This is a basic study of the theory of stresses and strains in beams, columns and thin-walled cylinders including combined bending and direct stresses.

Lecture: 3 hours

Prerequisite(s): ENGR 2050

ENGR 2620 - Linear Electrical Systems and Circuit Theory for Engineers
(3 Credits)
This course offers a study of electrical linear circuit theorems, Kirchhoff's Laws, DC resistive networks, dependent sources, natural and forced response of first and second order circuits, sinusoidal steady-state response and AC power.

Lecture: 3 hours

Prerequisite(s): (ENGR 2150 or PHYS 1500) and (MATH 2990 (may be taken concurrently) or MATH 2362 (may be taken concurrently))

ENGR 2621 - Linear Circuits Lab
(2 Credits)
Topics covered in this lab include: DC measurements, natural and step response of first and second order circuits, AC measurements, impulse and frequency response and operational amplifiers.

Lecture: 1 hour, Lab: 3 hours

Corequisite(s):ENGR 2620