ENGINEERING (EGR)

EGR 010 INTRODUCTION TO ENGINEERING 4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Advisory: MAT 903 or MAT 903M or High School Algebra I, or equivalent
Acceptable for credit: University of California, California State University
This course exposes students to the field of engineering and the various engineering disciplines. Course presents the basic skills necessary to succeed as an engineering student. The nature of engineering work and the roles of engineers are explored. The Engineering Design Process is addressed through multiple team-based projects and engineering problem-solving topics. Communication skills for technical presentations and reports are developed through practical engineering scenarios. Guest speakers from local engineering firms and tours to local companies are included. *Pass/No Pass Option. C-ID # ENGR 110.*

EGR 010H INTRODUCTION TO ENGINEERING – HONORS 4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Advisory: MAT 903 or MAT 903M or High School Algebra I, or equivalent
Acceptable for Credit: California State University, University of California
This course is the honors version of Introduction to Engineering. This course exposes students to the field of engineering and the various engineering disciplines. Course presents the basic skills necessary to succeed as an engineering student. The nature of engineering work and the roles of engineers are explored. The Engineering Design Process is addressed through multiple team-based projects and engineering problem-solving topics. Communication skills for technical presentations and reports are developed through practical engineering scenarios. Guest speakers from local engineering firms and tours to local companies are included. Students may not receive credit for both EGR 010 and EGR 010H. Enrollment in the Honors Transfer Project is required. *Pass/No Pass Option. C-ID # ENGR 110.*

EGR 023 MECHANICS - STATICS 3.0 UNITS
Total Lecture: 54 hours
Prerequisite: MAT 003B or any higher level math and PHY 004A
Acceptable for credit: University of California, California State University
This course applies the principles of mechanics to evaluate the static equilibrium of two- and three- dimensional engineering structures. Topics include the equilibrium of particles, equivalent force systems, equilibrium of rigid bodies, distributed loads, internal forces in beams, sheer and bending moment diagrams, truss analysis, and friction. This course is primarily for engineering transfer students. *Grade only. C-ID # ENGR 130.*

EGR 024 INTRODUCTION TO CIRCUIT ANALYSIS 3.0 UNITS
Total Lab: 54 hours
Prerequisite: MAT 003B, PHY 004B
Corequisite: EGR 024
Acceptable for credit: University of California, California State University
Introduction to Circuit Analysis Lab. This course is an introduction to the construction and measurement of electrical circuits. Basic use of electrical test and measurement instruments including multimeters, oscilloscopes, power supplies, and function generators. Use of circuit simulation software. Interpretation of measured and simulated data based on principles of circuit analysis for DC, transient, and sinusoidal steady-state (AC) conditions. Construction and measurement of basic operational amplifier circuits. This course is primarily for engineering transfer students. *Grade only.*

EGR 024L INTRODUCTION TO CIRCUIT ANALYSIS LABORATORY 1.0 UNIT
Total Lab: 54 hours
Advisory: MAT 003B, PHY 004B
Corequisite: EGR 024
Acceptable for credit: University of California, California State University
Introduction to Circuit Analysis Lab. This course is an introduction to the construction and measurement of electrical circuits. Basic use of electrical test and measurement instruments including multimeters, oscilloscopes, power supplies, and function generators. Use of circuit simulation software. Interpretation of measured and simulated data based on principles of circuit analysis for DC, transient, and sinusoidal steady-state (AC) conditions. Construction and measurement of basic operational amplifier circuits. This course is primarily for engineering transfer students. *Grade only.*

EGR 025 ENGINEERING GRAPHICS AND DESIGN 4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Prerequisite MAT 000D or MAT 002 or MAT 003A or MAT 003AH
Acceptable for credit: University of California, California State University
This course develops graphical visualization and design skills by applying graphics based engineering methods. The course also teaches engineering design by applying the conceptual design process and integrating graphics into design projects. Graphics assignments develop sketching, manual drafting, and computer aided drafting (CAD) skills. This course is primarily for engineering transfer students. *Grade only. C-ID # ENGR 150.*

EGR 026 ENGINEERING MATERIALS 4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Prerequisite: PHY 004A, CHM 001A or CHM 001AH
Acceptable for credit: University of California, California State University
This course presents the internal structures and resulting behaviors of materials used in engineering applications, including metals, ceramics, polymers, composites, and semiconductors. The emphasis is upon developing the ability both to select appropriate materials to meet engineering design criteria and to understand the effects of heat, stress, imperfections, and chemical environments upon material properties and performance. Laboratories provide opportunities to directly observe the structures and behaviors discussed in the course, to operate testing equipment, to analyze experimental data, and to prepare reports. *Grade only. C-ID # ENGR 140B. .*

EGR 030 INTRODUCTION TO COMPUTING FOR ENGINEERS 4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Advisory: MAT 003A and CIS 002
Acceptable for credit: University of California, California State University
This course introduces software development using a high level language such as C or C++. Engineering problems are solved through software programming techniques and by interfacing software to hardware circuits. A microcontroller system such as Arduino is used. *Pass/No Pass Option. C-ID # COMP 122*
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