ENGINEERING (EGR)

EGR-100 Engineering Orientation (1)

Introduces professional development as it relates to engineering. Explores various engineering disciplines and career paths. Covers the scientific and engineering method, engineering design process, problemsolving, ethics, and the teaching and learning process. Arts & Sciences Elective Code: A

Hours per week: 1.0 lecture

Prerequisite: Take MAT-102 or qualify with a placement test score.

EGR-160 Engineering I (3)

Develops skills in modeling and solving engineering problems, data analysis, engineering graphics, and technical communication using computer application software. Arts & Sciences Elective Code: A *Hours per week*: 2.0 lecture, 2.0 lab

Prerequisite: Take MAT-136 or a qualify with placement test score.

EGR-167 Engineering II (4)

Develops skills in solving engineering problems using the C-programming language. Applies programming and numerical techniques directly to the engineering discipline. Arts & Sciences Elective Code: A *Hours per week:* 4.0 lecture

Prerequisite: Take MAT-136 or a qualify with placement test score.

EGR-170 Materials Science (3)

Covers the different structures of materials and the resulting mechanical, electrical and magnetic properties; phase diagrams; kinetics and materials in engineering design. Arts & Sciences Elective Code: A *Hours per week*: 3.0 lecture

Prerequisite: Take MAT-136 or a qualify with placement test score. Take CHM-165.

EGR-180 Statics (3)

Covers vector algebra, forces, couples, equivalent-force, couple system, Newton's laws, friction, equilibrium, centroids, area moments of inertia, and applications. Arts & Sciences Elective Code: A *Hours per week*: 3.0 lecture

Prerequisite: Take MAT-210.

EGR-280 Dynamics (3)

Emphasizes vector calculus, Newton's laws, kinetics and kinematics of particle motion, many-particles systems, and rigid bodies and applications. Arts & Sciences Elective Code: A *Hours per week*: 3.0 lecture

Prerequisite: Take MAT-216. Take EGR-180.

EGR-285 Introduction to Electrical Science (4)

Covers DC and AC circuits, Ohm's law, Kirchoff's voltage and current laws. Provides circuit analysis techniques including Thevenin equivalents, superposition, source transformation, nodal and mesh analysis, transient and steady state response, complex impedance, average power, RMS voltage and current. Arts & Sciences Elective Code: A *Hours per week*: 3.0 lecture, 2.0 lab

Prerequisite: Take MAT-216.

EGR-290 Thermodynamics (3)

Includes basic elements of classical thermodynamics, first and second law, reversibility, irreversibility, Carnot cycle, properties of pure substance, closed and open simple systems and one dimension steady-state and transient flow systems, and engineering applications. Arts & Sciences Elective Code: A

Hours per week: 3.0 lecture

Prerequisite: Take MAT-216. Take CHM-165.

EGR-924 Honors Project (1)

Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Arts & Sciences Elective Code: A; Comments: Permissions of instructor and dean *Hours per week*: 1.0 lecture

EGR-928 Independent Study (1-3)

Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean *Hours per week*: 2.0 lab