

ENGINEERING (EGR) - ROCK COUNTY

Courses

EGR 102 The Concepts of Engineering 2 Units

This course equips engineering students with the necessary tools & background info to be successful students & practicing engineers. Topics include Proj. Mgmt., team work, technical writing, creating presentations, ethics, engineering design, & a thorough understanding of the engineering profession.

EGR 103 Engineering Spreadsheet Tools 1 Units

This course equips engineering students with fundamental spreadsheet tools for use in their engineering schooling & future career. Topics include an Intro to computers, flow charts, spreadsheets, functions, graphics, curve fitting, logical statements, statistical analysis, unit conversion, & other data analysis techniques. Students who complete both EGR 102 & EGR 103 will receive the AP/IS designation of EGR 105.

EGR 105 Engineering Fundamentals 3 Units

This course is designed to equip engineering students with the necessary tools & background info to prepare them to be successful engineering students as well as a successful practicing engineer. Topics covered in this course include Proj. Mgmt., team work, technical writing, working with data & using spreadsheets, creating presentations, engineering design, & a thorough understanding of the engineering profession. PREREQ: MAT 105 OR CONCURRENT ENROLLMENT ANTIREQ: EGR 100 OR 102 OR 103

EGR 110 Engineering Graphics with Computer Aided Drafting 3 Units

(Previously GRA 110) An introductory course in engineering graphics focusing on graphical communication. Topics include descriptive geometry elements, visualization, engineering drawing techniques, orthographic projection, pictorial representation, auxiliary views, section views, & basic dimensioning. The course incorporates computer aided drafting (CAD) with engineering applications using 2-D drawing & 3-D modeling techniques.

EGR 111 Solid Modeling and Design 1 Units

This Proj.-based course introduces students to reverse engineering & three-dimensional design using industry standard solid modeling software (SolidWorks). The course assumes some previous knowledge of solid modeling, such as would typically be gained in an introductory engineering graphics & computer aided drafting course. This course will include one or more reverse engineering Proj.(s) that will require the students' application of engineering problem skills.

EGR 176 Creative Problem Solving and Project Management 3 Units

This course is designed for students in any discipline to understand creative problem solving & Proj. Mgmt.. The course is an interdisciplinary course teaching design, problem solving, & Proj. Mgmt. skills by applying these principles in the context of a Rube Goldberg machine. The course will focus on solving the Rube Goldberg challenge for the year with the end product being a competitive Rube Goldberg machine. The course will cover topics in creative problem solving, design work, teamwork, Proj. Mgmt., sketching, public speaking, presentational performances, publishing, stage & set design & construction. The final product will then be displayed for the campus community & toured throughout various community events & schools.

EGR 201 Statics 3 Units

(Previously MEC 201) Principles of mechanics, force systems, equilibrium, structures, distributed forces, moments of inertia of areas, & friction. The course will serve the requirements of the several engineering curricula.

PREREQ: MAT 221 (C OR BETTER) OR CONSENT OF INSTRUCTOR

EGR 202 Dynamics 3 Units

(Previously MEC 202) Kinematics, force-mass-acceleration relations, work & energy, impulse & momentum, & moments of inertia of mass. This course will serve the requirements of the several engineering curricula.

PREREQ: EGR 201 (C- OR BETTER), MAT 222 (C OR BETTER) OR CONSENT OF INSTRUCTOR

EGR 203 Mechanics of Materials 3-5 Units

(Previously MEC 203) Stress & strain, torsion, bending of beams, compound stresses, principal stresses, deflection of beams, statically indeterminate members, columns, elastic buckling, fatigue, creep, impact, & concrete properties.

PREREQ: EGR 201 (C OR BETTER) OR CONSENT OF INSTRUCTOR

EGR 263 Engineering Thermodynamics 3 Units

First & second laws of thermodynamics; thermodynamic properties of real & ideal gases, vapors, & mixtures; analysis of power & refrigeration cycles.

PREREQ: CHE 145 OR CHE 165 OR PHY 201 OR EGR 202, AND MAT223 OR MATH 234 OR CONCURRENT ENROLLMENT, OR CONSENT OF INSTRUCTOR

EGR 282 Engineering Economics 3 Units

Economic & financial factors in the engineering Env. to be considered in managerial decision making. Emphasizes the time value of money, present worth analysis, uniform series, rate of return, benefit cost ratios, depreciation, income taxes, inflation.

PREREQ: MAT 110, EGR 105 OR EGR 103 OR CPS 107 OR CONSENT

EGR 291 Special Topics in Engineering 1-3 Units

In-depth coverage of one or more topics in engineering, engineering graphics, or engineering mechanics not covered by an existing course. Choice of topics depends on student interest, staff & equipment availability. Topics related to current issues or new technology are particularly appropriate.

EGR 294 Internship in Engineering Repeatable 1-3 Units

An internship or service learning project partnering students with organizations in the community or on campus. This course should provide practical experience appropriate to the student's educational goals by applying knowledge & skills learned in previous EGR courses in our institution. Student & instructor will meet regularly to prepare for & evaluate experiences. This course will not be used to employ students as campus workers by substituting credit for wages. Repeatable for a maximum of six credits.

PREREQ: AT LEAST FOUR CREDITS OF PRIOR EGR COURSEWORK AND CONSENT OF INSTRUCTOR

EGR 299 Independent Study in Engineering 1-3 Units

Indp. study under the supervision of an instructor. The work may, for example, consist of advanced Lab investigation into a particular topic or library research & writing of a paper on some subject of interest.

PREREQ: CONSENT OF INSTRUCTOR