

EGN: ENGINEERING: GENERAL

Courses	Credit(s)	Contact	Lab
EGN 1007C. ENGINEERING CONCEPTS & METHODS. ENGINEERING CONCEPTS & METHODS Prerequisite: MAC 1105 or higher Introduction to computer software applications involving spreadsheets (Excel), and procedural programming (MATLAB) in order to solve a variety of engineering related problems. (Special Fee: \$39.00).	1	1	2
EGN 2045. ENGINEERING AND TECHNOLOGY CALCULUS I. ENGINEERING AND TECHNOLOGY CALCULUS I Prerequisite: Minimum grade of C in MAC 1114 or MAC 1140 This course presents the concepts of pre-calculus and calculus with direct real world, technical applications that illustrate the relevance and usefulness of technical mathematical skills necessary to solve complex engineering and technology problems outside the classroom. Concepts through linear algebra, matrices, derivatives of algebraic and transcendental functions, techniques of differentiation, applications of derivatives, differentials, and optimization are covered. Minimum grade of C required if used to satisfy Electrical and Computer Engineering Technology, B.S. Degree requirement.	3	4	0
EGN 2210C. NUMERICAL COMPUTATIONS & PROGRAMMING FOR ENGINEERS. NUMERICAL COMPUTATIONS & PROGRAMMING FOR ENGINEERS Prerequisite: Minimum grade of C in MAC 2312 This course provides a fundamental knowledge of computer operations and programming languages. Numerical computations in solving engineering problems will be emphasized. Students will use microcontroller for the class project. Minimum grade of C is required for the AS degree.	3	2	1
EGN 2312. ENGINEERING ANALYSIS-STATICS. ENGINEERING ANALYSIS-STATICS Prerequisites: Minimum grade of C in both MAC 2311 and PHY 2048C. Prerequisite or Corequisite: MAC 2312. Fundamental concepts of mechanics, including resultants of force systems, free-body diagrams, equilibrium of rigid bodies, and analysis of structures.	3	3	0
EGN 2322. ENGINEERING ANALYSIS-DYNAMICS. ENGINEERING ANALYSIS-DYNAMICS Prerequisite: Minimum grades of C in EGN 2312 and MAC 2313 Prerequisite or Corequisite: MAP 2302 Kinematics and kinetics of particles and rigid bodies; mass and acceleration, work and energy, impulse and momentum; coordinate transformation and differential equation formulation of 3D motion; flywheel and balancing of rotating machines.	3	3	0
EGN 2332C. MECHANICS OF MATERIALS. MECHANICS OF MATERIALS Prerequisite: EGN 2312, MAC 2313, and MAP 2302 Prerequisite or Corequisite: MAP 2302 Concepts of stress, strain, strength, deflection of axial force members, shafts in torsion, beams in flexure, combined stress, stability of columns, and design of simple elements.	3	2	2
EGN 2421. ENGINEERING ANALYSIS. ENGINEERING ANALYSIS Prerequisite: Minimum grades of C in MAC 2312 and EGN 2210C. Engineering applications of numerical methods using computer-aided analysis, including complex variables, curve fitting, matrix operations, Fourier series, and numerical integration.	3	3	0

EGN 2440. PROBABILITY AND STATISTICS FOR ENGINEERS. 3 3 0

PROBABILITY AND STATISTICS FOR ENGINEERS Prerequisite: Minimum grade of C in MAC 2312. Axioms of probability, combinatorial and geometrical probability; probability distributions; measures of location and dispersion; sampling and sampling distributions; estimations and tests of hypotheses; engineering applications.

EGN 2930. SELECTED TOPICS IN ENGINEERING. 1-4 variable
SELECTED TOPICS IN ENGINEERING Selected topics in engineering based on the needs and areas of interest of the class and professor.

May include laboratory and/or field work as part of the class. Multiple credit course. May be repeated for a maximum of 3 credits, but grade forgiveness cannot be applied.

EGN 3046. ENGINEERING AND TECHNOLOGY CALCULUS II. 4 4 0

ENGINEERING AND TECHNOLOGY CALCULUS II Prerequisite: Minimum grade of C in EGN 2045 or MAC 2311. In this second Engineering and Technology Calculus course, the study of techniques and applications of Calculus to solve complex engineering and technology problems will be reinforced and extended. Concepts through sequences and series; antiderivatives, definite integrals, techniques and applications of integration; First- and Higher-Order differential equations, Laplace transforms; multivariable calculus and Fourier series are covered.

Minimum grade of C required if used to satisfy Electrical and Computer Engineering Technology, B.S. Degree requirement.

EGN 3428. ENGINEERING MATHEMATICAL ANALYSIS. 4 4 0

ENGINEERING MATHEMATICAL ANALYSIS Prerequisite: Minimum grade of C in MAC 2312 Advanced mathematical concepts and methods needed to solve engineering and engineering technology problems.

Topics include First- and higher-order differential equations, Laplace transforms, linear algebra, and matrix analysis, Fourier series and transforms, Complex numbers, variables, and functions.

EGN 3443. PROBABILITY AND STATISTICS FOR ENGINEERING TECHNOLOGY. 3 3 0

PROBABILITY AND STATISTICS FOR ENGINEERING TECHNOLOGY Prerequisite: Minimum grade of C in MAC 2312 or minimum grade of C in EGN 3046 This course encompasses topics of statistical methods and probability theory important for engineering technology students. Topics include organization and description of data, axioms and theorems of probability, conditional probability, probability distributions, Poisson processes, probability density functions, statistics of populations and samples, estimation, test of hypotheses, regression analysis as applied to Engineering Technology. A minimum grade of C is required if used to satisfy Electrical and Computer Engineering Technology, B.S. degree requirement.