ENGINEERING (EG)

EG 103 Physics & Engineering Seminar I (1)
An overview of the fields and practice of physics and engineering. Students will participate in weekly readings and discussions, and complete at least one written piece and at least one presentation. Specific content will change each time the course is offered.

EG 105 Introduction to Engineering (3)
Introduction to the professional role of an engineer with an orientation to the academic requirements of engineering studies, responsibilities of engineering students and professionals, discussion of various engineering careers, job site duties, professional development and registration and engineering ethics. Included are problem definition and solution, engineering design and terminology and the role of technology and its influence on society.

EG 116 Engineering Graphics (3)
Elements of geometry of engineering drawing with emphasis on spatial visualization and applications. Freehand sketching, dimensioning, and graphs. Computer aided design and engineering analysis.

EG 250 Engineering Mechanics: Statics (3)
Vector notation; resultants of force systems; analysis of force systems in equilibrium including beams, frames and trusses; analysis of systems involving friction forces; determination of centroids, centers of gravity, second moments of areas, moments of inertia. Prerequisites: MA 151 and PS 281.

EG 303 Physics & Engineering Seminar II (1)
An overview of the fields and practice of physics and engineering. Students will participate in weekly readings and discussions, and complete at least one written piece and at least one presentation. Specific content will change each time the course is offered. Prerequisite: upper-division standing

EG 320 Engineering for STEM Educators (3)
Designed to introduce concepts and applications of engineering to STEM educators. Course will explore various experimental, analysis, and design situations to develop knowledge about how objects work together to perform a function. Experiments will develop an understanding of basic engineering concepts such as motion, solid mechanics, fluid mechanics, thermodynamics, electricity, and magnetism. Analysis of experiments will provide recognition of experimental variables and their relationships to mathematical equations. Significant emphasis is on conceptual understanding of how mathematics and physics work together to solve engineering problems. This course does not satisfy any engineering prerequisite/requirement outside of the STEM education program. Prerequisite: BI 319 Biology for STEM Educators with a "C" or better; concurrent enrollment in MA 320 Mathematics for Middle School Teachers.

EG 351 Engineering Mechanics: Dynamics (3)
Displacement, velocity, and acceleration of a particle; relation between forces acting on rigid bodies and the changes in motion produced; translation; rotation; motion in a plane; solutions using the principles of force, mass and acceleration, work and energy, and impulse and momentum. Prerequisites: EG 250 and MA 152.

EG 360 Mechanics of Materials (3)
Elementary theories of stress and strain, behavior of materials, and applications of these theories and their generalizations to the study of stress distribution, deformation, and instability in the simple structural forms that occur most frequently in engineering practice. Prerequisites: EG 250 and MA 253.