EGEN 102. Intro to Engineer Compound Apps. 2 Credits. (2 Lec) S
COREQUISITE: M 171Q. Effective methods for applying the computer to common numerical problems encountered in chemical engineering. Chemical engineering examples will provide a basis for more comprehensive problems encountered in the other professional level courses.

EGEN 105. Intro to General Engineering. 2 Credits. (1 Lec, 1 Lab) F,S
Provides students an opportunity to explore the fields of engineering, engineering technology, and computer science. Other topics include engineering design, career opportunities, professionalism, and ethics.

EGEN 115. Engineering Graphics. 1 Credit. (1 Lec) F,S
Lec 1 Introductory course developing freehand sketching for engineering design graphics. Skills will be developed for sketching and interpreting dimensioned multi-view drawings, pictorials, sections, and assemblies.

EGEN 125CS. Tech, Innovation, and Society. 3 Credits. (3 Lec) F,S,Su
This course explores the innovative engineering processes that connect the creative elements of science and engineering with solving problems of everyday life. Topics include understanding the role of creativity, public safety and ethics in creating technological solutions. Case studies are investigated, including applying critical thinking to exploring how innovation can help society.

EGEN 200. Designing Our Community. 1 Credit. (1 Sem) F,S
This course is designed to explore issues in engineering and college academics for American Indian students in the Designing Our Community Program. The course will provide a learning community among students to ensure success in achieving their professional goals. Spring semester focuses on service learning projects.

EGEN 201. Engineering Mechanics–Statics. 3 Credits. (3 Lec) F,S,Su
PREREQUISITE: PHSX 220 or PHSX 240. COREQUISITE: M 273Q or M 283Q. Equilibrium of particles and rigid bodies; static analysis of structures including trusses, beams, frames and machines; coulomb friction; area and mass centroids, moments and products of inertia.

EGEN 202. Engineering Mechanics Dynamics. 3 Credits. (3 Lec) F,S,Su On demand PREREQUISITE: EGEN 201 or EGEN 221 and M 273Q or M 283Q. Kinematics, kinetics, work-energy, and impulse-momentum for particles and rigid bodies.

EGEN 203. Applied Mechanics. 3 Credits. (3 Lec) F,S
PREREQUISITE: PHSX 205 or PHSX 220 or PHSX 240. COREQUISITE: M 166Q or M 172Q. Force systems in equilibrium and applications to structural trusses and frames; section properties; distributed force systems; shear and moment distributions in beams; basic particle dynamics.

EGEN 205. Mechanics of Mtls (equiv 305). 3 Credits. (3 Lec) F,S,Su On Demand PREREQUISITE: EGEN 201 or EGEN 221. Stress and strain, Hooke's Law, thermal strain, torsion, bending of beams, combined stress, limit analysis, energy methods, virtual work, column theory.

EGEN 208. Applied Strength of Materials. 3 Credits. (3 Lec) F,S
Lec 3 PREREQUISITE: EGEN 201 or EGEN 203 or EGEN 221. Equilibrium and deformation of structural elements; concepts of stress and strain and interrelationship; representation and transformation of combined stress states; axial, torsional and flexural stresses and deformation; column buckling.

EGEN 221. Honor Statics. 3 Credits. (2 Lec, 1 Lab) On Demand PREREQUISITE: PHSX 200 or PHSX 240 and good standing in University Honors. COREQUISITE: M 273Q or M 283Q. Honors offering of engineering statics, including topics dealing with equilibrium of particles and rigid bodies; static analysis of structures including trusses, beams, frames and machines; coulomb friction; area and mass centroids, moments and products of inertia.

EGEN 290R. Undergraduate Research. 1-6 Credits. (1-6 Ind; max unlimited) F,S
Directed undergraduate research which may culminate in a written work or other creative project. Course will address responsible conduct of research. May be repeated.

EGEN 291. Special Topics. 1-4 Credits. (1-4 Ind; min 1 cr max) On Demand PREREQUISITE: None required but some may be determined necessary by each offering department. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

EGEN 292. Independent Study. 1-3 Credits. (1 Ind; 6 cr max) On Demand PREREQUISITE: Consent of instructor and approval of department head. Directed research and study on an individual basis.
EGEN 506. Numerical Sol to Engr Problems. 3 Credits. (3 Lec) S
PREREQUISITE: EGEN 505 or instructor approval. Numerical methods used to solve common engineering research problems. Solutions to nonlinear equations. Optimization methods.

EGEN 541. Thy Magnetic Resonance Imag I. 3 Credits. (3 Lec) F,S
PREREQUISITE: Graduate standing, or consent of instructor. Advanced topics in NMR phenomena including relaxation, diffusion, chemical shift, and magnetic susceptibility, as well as experimental aspects including phase cycling, magnetic field gradients, rf coil, tuning and matching and pulse sequence development will be covered.

EGEN 542. Thy Magnetic Resonance Img II. 3 Credits. (3 Lec) F,S
PREREQUISITE: Graduate standing. Consent of Instructor. Advanced topics in nuclear magnetic resonance phenomena focusing on molecular dynamics and pulse sequence development for measuring complex dynamics will be covered.