General Engineering Courses

Engineering Ethics Values Courses

ENEV 1952. Ethics and Values Colloquium 1. 1 cr. hr.
The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

ENEV 2952. Ethics and Values Colloquium 2. 1 cr. hr.
The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

ENEV 3952. Ethics and Values Colloquium 3. 1 cr. hr.
The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

ENEV 4952. Ethics and Values Colloquium 4. 1 cr. hr.
The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

ENEV 4995. Independent Study. 1-4 cr. hrs.
Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stndg, 3.000 GPA, cons. of instr., and cons. of dept. ch.

General Engineering Courses

GEEN 1120. Introduction to Engineering Graphics. 1 cr. hr.
Practicing and understanding the engineering graphics fundamentals and application of computer-aided design (CAD), utilizing solid modeling software to develop typical industrial product 3-D models and drawings. Prereq: Enrolled in Engineering.

GEEN 1130. Introduction to Engineering Computing. 1 cr. hr.
Introduces students to an engineering programming environment and the corresponding algorithm and logic development. Students apply engineering computing techniques to solve selected engineering (model) equations and problems. Prereq: Enrolled in the College of Engineering.

GEEN 1200. Engineering Discovery 1. 3 cr. hrs.
Introduces students to engineering and engineers, engineering system investigation and modeling, and engineering graphics fundamentals and computer-aided design (CAD). The lecture and laboratory topics, contents and activities include engineering essentials and Fermi's questions/problems, scientific and engineering dimensions and units, introduction to spreadsheet computing, engineering graphics fundamentals and computer-aided design (CAD), utilizing solid modeling software, and engineering system investigation through various department modules. Professionalism, teamwork and technical communication are stressed. Students participate in a team-based computer graphics design project at the end of the semester.

GEEN 1210. Engineering Discovery 2. 3 cr. hrs.
Introduces students to engineering problem solving, the engineering design process and engineering computing. The lecture and laboratory topics/contents and activities include engineering problem solving steps/procedures, introduction to the engineering design process, introduction to programming basics and their applications to scientific and engineering problems, and multidisciplinary engineering problem solving through various department modules. Professionalism, teamwork, and technical communication are stressed. Students participate in a team-based engineering design projects during the semester. Prereq: GEEN 1200.

GEEN 2952. Professional Development for Engineers. 1 cr. hr.
Objective is to assist engineering students with their career discernment and to promote professional development. Focuses on the skills needed to secure a job and provides resource tools and resources to conduct a job search. Topics include: professional development; engineering options; cooperative education and internship opportunities; ethics as well as job search, resume writing, interviewing, professional communication and networking techniques. All sophomore-level and transfer students required to attend. Prereq: Enrolled in the College of Engineering.

GEEN 2960. Engineering Service Seminar. 0 cr. hrs.
Consists of a series of lectures, video presentations and discussions involving engineering-related service learning. Reflection providing an awareness of an engineer's professional responsibilities to the community at large, and future opportunities for such involvement at the local, national and/or international levels. SNC/UNC grade assessment.

GEEN 2961. E-Lead 1: Foundations of Leadership and Individual Development. 1 cr. hr.
Identifying and developing individual traits, skills, talents, behaviors, personal management and values which contribute to effective leadership, especially in the technical professions. Investigation of leadership theory and leadership styles and the influence of gender, culture, faith and ethical character. Personality assessments, case studies, readings, presentations, role-playing and simulations will be emphasized. Prereq: GEEN 2952, Soph. stndng., and Enrollment in the College of Engineering.
GEEN 3959. E-Lead Experience: Explorations in Engineering Leadership Practice. 1 cr. hr.
Develop skills and practices important for life-long learning related to personal leadership growth and development in the technical fields. Studies include selecting and reading E-Lead approved leadership texts and producing video book reports about the leadership texts; discussing other leadership texts and reports with peers in the class; identifying, arranging and participating in a leadership shadow experience with industry leaders in technical fields; and attending a week-long national leadership conference. Prereq: GEEN 2952, GEEN 2961 and Jr. stndg., a member of the E-Lead Program in the College of Engineering and cons. of dept.

GEEN 3961. E-Lead 2: Leading Others. 1 cr. hr.
Identifying and developing skills, talents, behaviors, and attributes which contribute to effective leadership of teams and projects, especially in the technical professions. Investigation into leading change, collaboration, motivating others, negotiation, conflict resolution, performance evaluation, communication, facilitation, emotional intelligence, diversity challenges, global and cultural awareness, servant leadership. Simulations, role-playing, case studies, readings, presentations, and team problem-solving will be emphasized. Prereq: GEEN 2952, GEEN 2961, Jr. stndng., and Enrollment in the College of Engineering.

Students in the E-Lead program are required to participate in an industry internship, co-op, research project or major service project. During these experiences, E-Leaders make observations and reflect on their experience through the three leadership themes of the E-Lead Program - leading oneself, leading with others, and leading technology and innovation. Upon completion of the experience, students submit a reflective and integrative paper about the experience in his/her role, responding to predetermined questions and citing specific examples from the professional engineering leadership experience to describe their observations and assertions. Prereq: GEEN 2952, GEEN 2961 and Jr. stndg., a member of the E-Lead Program in the College of Engineering and cons. of dept.

GEEN 4961. E-Lead 3: Leading Technology and Innovation. 1 cr. hr.
Identifying and developing skills, talents, behaviors, and attributes which contribute to effective leadership of innovation and technology development in technical organizations. Investigation into leading change, strategic planning, marketing, competitive trends, benchmarking, product specification, financial planning, global and cultural markets, and ethical conduct. Simulations, case studies, readings, projects, presentations, and problem-solving will be emphasized. Prereq: GEEN 2952, GEEN 2961, GEEN 3961, Sr. stndng., and Enrollment in the College of Engineering.

GEEN 4995. Independent Study in General Engineering. 1-3 cr. hrs.
Undergraduate independent study project of either theoretical or experimental nature. Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.

GEEN 4998. E-Lead Experience: Capstone Project. 3 cr. hrs.
The culminating engineering leadership experience for students completing the concentration in engineering leadership. Students use all knowledge and skills gained in the prerequisite courses to create meaningful change in a technical field or environment that has a significant impact on people and/or processes. Working with a team, students lead a project that focuses on technology development and demonstrate clear progression from brainstorming to planning to resource procurement to implementation. Prereq: GEEN 2952, GEEN 2961, GEEN 3961, GEEN 3959, GEEN 3990, GEEN 4961, and Sr. stndg., enrolled in the E-Lead Program in the College of Engineering and cons. of dept.