Undergraduate Program Assessment

Department of Civil and Environmental Engineering

Student Learning Objectives

- Knowledge of fundamental concepts from physics, chemistry, biological science, and engineering science that are relevant to the practice of Civil Engineering.
- Ability to: define problems; conduct experiments; analyze and interpret data; and apply graphical, mathematical, statistical, computational, and design methods to solve Civil Engineering problems.
- Proficiency in combining techniques from among the disciplines of environmental, geotechnical, structural, and transportation engineering to solve Civil Engineering problems.
- Experience in working productively with others who possess different technical skills and backgrounds.
- Ability to communicate ideas effectively through written, verbal, graphical, and mathematical means.
- An understanding of the impacts that Civil Engineering decisions have on society and the environment.
- An understanding of the responsibility of the civil engineer to contribute to society and the profession and to uphold the ethical standards of the profession such as those expressed in the Code of Ethics of ASCE.
- An appreciation of the value of learning and the necessity of continuing profession development, including professional engineer registration.
- An awareness of basic codes, regulations, standards, and contract documents in Civil Engineering and their appropriate use and application.
- An understanding of the role of research in solving Civil Engineering problems.

Assessment tools

- Indirect methods:
  - Freshman Year Survey, which includes questions about students’ perception of their exposure to topics that relate to student learning objectives.
  - Course Outcome Survey: included with final course evaluations, and asks students to assess how well the course they just completed achieved each of the student learning objectives.
  - Senior Survey (in-house designed): includes questions on opinions regarding how well the Program achieved each learning objective.
  - Employer Survey: conducted at the “Civil Fair” departmental job fair, employers in attendance are asked to complete a survey on how well the students were prepared with respect to each student learning objective.
  - Continuous Quality Improvement Program, consisting of faculty self-assessments and reviews of these self-assessments.
  - CEE Student Advisory Committee, which meets occasionally to provide feedback to the Department.
  - Discussions at Preregistration: Student feedback on course outcomes is discussed between students and faculty, and amongst students themselves, during a single preregistration evening.

Highlighted recent activities

- Based on feedback from faculty and students that led to the conclusion that the Resource Economics course that majors took in order to learn probability and statistics gave them inadequate preparation, a new course was designed. Probability and Statistics in Civil and Environmental Engineering, designed to teach the concepts from a civil engineering perspective and include examples from the various civil engineering disciplines, was made a permanent part of the required curriculum in Fall 2005.