

Civil Engineering Program Objectives and Corresponding Outcomes

Objective 1. Prepare students in the fundamentals of engineering.

- a) Graduates will have a broad foundation in college-level physics, chemistry, mathematics, computer applications, and statistics.
- b) Graduates will have a comprehensive foundation in the engineering sciences, including solid and fluid mechanics, materials, electrical circuits, graphics, engineering economics, and thermodynamics. (ABET I, partial)
- c) Graduates will have the ability to apply knowledge of mathematics, sciences and engineering fundamentals. (ABET A)

Objective 2. Provide a solid background for graduates to begin successful careers in civil engineering.

- a) Graduates will have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. (ABET K)
- b) Graduates will have a broad understanding of civil engineering, covering the subdisciplines of geotechnical, structural, transportation, and water resources/environmental engineering.
- c) Through laboratory exercises across the curriculum, graduates will have gained the ability to design and conduct experiments, as well as to interpret data. (ABET B)
- d) Through design projects across the curriculum and in a capstone design course, graduates will have gained the ability to design a system, component, or process to meet desired needs. (ABET C)
- e) Graduate will have good written and oral communication skills. (ABET G)
- f) Graduates will have a sufficiently rigorous program to prepare them for graduate school and for other life-long learning opportunities. (ABET I, partial)
- g) Graduates will have an understanding of how changes in laws, regulations, economics, design standards, public opinion, and client expectations affect civil engineering design. (ABET J)
- h) Graduates will have the ability to identify, formulate, and solve engineering problems. (ABET E)

Objective 3. Provide a strong understanding of professionalism.

- a) Graduates will have had an opportunity to participate in chapters of professional organizations, particularly ASCE and ITE. (ABET I, partial)
- b) Maintain a high degree of professionalism within the faculty by having strong involvement with professional organizations and by having all faculty professionally registered.
- c) Graduates will have an understanding of professional and ethical responsibility. (ABET F)
- d) Graduates will have had the benefit of involvement of practicing engineers in curriculum design and in assistance with class projects.
- e) Graduate will have had an opportunity to demonstrate their ability to function on multidisciplinary teams. (ABET D)

- f) Graduates will have obtained a broad education necessary to understand the impact of engineering solutions in a global context. (ABET H)
- g) Encourage students to participate in co-op programs or to seek summer or part-time employment in local engineering firms.

Objective 4. Provide a forward-looking education that prepares graduates for the dynamics of the profession.

- a) Maintain a standing faculty committee on the curriculum that conducts continuous reviews of the program and its effectiveness.
- b) Maintain up-to-date instructional and laboratory equipment.
- c) Actively promote the concept of life-long learning. (ABET I, partially)

Objective 5. Provide a good learning environment for all students.

- a) Maintain a program that is accessible to non-traditional students.
- b) Actively encourage the enrollment and retention of women and under-represented minorities.