Undergraduate Program Assessment

Department of Civil and Environmental Engineering

Student Learning Objectives:
1. an ability to apply knowledge of mathematics, science, and engineering
2. an ability to design and conduct experiments, as well as to analyze and interpret data
3. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. an ability to function on multi-disciplinary teams
5. an ability to identify, formulate, and solve engineering problems
6. an understanding of professional and ethical responsibility
7. an ability to communicate effectively
8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. a recognition of the need for, and an ability to engage in life-long learning
10. a knowledge of contemporary issues
11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Assessment tools
- Freshman Year Survey, which includes questions about students’ perception of their exposure to topics that relate to student learning objectives.
- Senior Survey (in-house designed): includes questions on opinions regarding how well the Program achieved each learning objective.
- Employer Survey: employers who have attended the “Civil Fair” departmental job fair are asked to complete a survey on how well the students were prepared with respect to each student learning objective.
- Course Performance Indices: specific course outcomes that support Student Learning Objectives; data is collected in two ways.
  - Faculty Assessment: completed by faculty based on specific course product (e.g. homework scores, exam questions) to indicate achievement of course performance indices.
  - Student Self-Assessment Survey: included with final course evaluations, and asks students to assess how well the course they just completed achieved the course performance indices.
- Undergraduate Curriculum Committee: reviews results of assessments and make recommendations to department faculty for curriculum revisions.

Highlighted recent activities
Engineering laboratory experience in required courses was rearranged in 2010 with a laboratory section moving from CEE 357 to CEE 370. Also in 2010, the requirement to take CEE 371 was replaced with a requirement to take a senior elective in the area of environmental and water resources engineering.