Civil Engineering

Degree Designation: BSCE

Mission Statement

The mission of the Department of Civil and Environmental Engineering is

- To provide a quality educational experience for all students, both undergraduate and graduate, at the level of the top ranked universities in the nation;
- To develop new knowledge, processes, or procedures through research which will benefit mankind; and
- To provide service through professional activities

To accomplish this mission, the Department provides our undergraduate students with a strong, broad-based, engineering education which gives them the basic intellectual and organization skills that allow them to work with complex systems with technological, social and environmental components. As many of our students begin work upon graduation in industry or with governmental organizations, the curriculum is designed to prepare our students for these roles by requiring a number of courses in the various fields of civil engineering and by providing limited specialization in one given area. The curriculum is designed to encourage lifelong learning and to prepare students for undertaking advanced studies in engineering or in other professional areas.

Student Learning Outcomes

Content / Discipline Skills

- Strong technical education needed for a career in civil engineering.
- Education that prepares them to perform effectively in the workplace with the communication skills needed to deal with fellow workers, clients, and the public.
- Education that allows them to understand the societal implications of engineering decisions and designs in both a local and global context and the ethical training to evaluate those implications.
- Education that promotes the full and continuing development of their potential as engineers and effective members of society.

Critical Thinking Skills

- The ability to identify, formulate, and solve engineering problems;
- The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- A knowledge of contemporary issues; and
- A recognition of the need for, and an ability to engage in life-long learning;
- The broad education necessary to understand the impact of engineering solutions in a global and societal context;
- An understanding of professional and ethical responsibility;
- The ability to design a system, component, or process to meet desired needs;
• The ability to design and conduct experiments, as well as to analyze and interpret data;
• The ability to apply knowledge of mathematics, science, and engineering;
• The ability to communicate effectively;

Communication Skills

• Demonstrate the ability to engage in effective oral and written communication.

Assessment Strategies

• The Department evaluates the achievement of educational outcomes using student performance in courses, input from employers of graduates, senior exit interviews and surveys, and the college survey of alumni.
• The Colleges Alumni Survey provides the perspective of recent graduates and those with some years of experience serving to validate the Department’s other assessments. The Department’s alumni are in a position to inform the Department as to how well their undergraduate education served them as professionals and to offer suggestions for improvements based upon their experiences.
• The Exit Interview Committee of the Department uses exit interviews and surveys as a vehicle for soliciting student feedback regarding their educational experience.
• The Industrial Liaison Committee of the Department contacts employers and receive feedback on the level of preparedness of our students and their long-term career progress.
• The Department believes that course performance is a key measurement technique for assessing student achievement and provides a cornerstone for determining whether or not a student has acquired proficiency in basic and advanced concepts in civil engineering. The Department also uses this measure to assess communication skills and the level of understanding of non-technical subject material.

Career/Employment Options for Graduates

Civil Engineering is a broad based discipline that includes Structural Engineering, Geotechnical Engineering, Water Resource and Environmental Engineering, and Transportation Engineering. Thus, there are many job opportunities for our graduates in consulting engineering firms and governmental agencies.