The Department of Civil, Construction, and Environmental Engineering (CCEE) offers several degree programs concerned with the improvement and care of the built and natural environments. Graduates of our programs are involved with the planning, design, construction, operation, and maintenance of buildings, dams, bridges, harbors, power facilities, pollution control facilities, water supply, and transportation systems.

**Major Specialties**

The department offers undergraduate degree programs leading to the Bachelor of Science in *Civil Engineering*, the Bachelor of Science in *Construction Engineering and Management*, and the Bachelor of Science in *Environmental Engineering*. All three programs are accredited by ABET. Graduation with an ABET accredited engineering degree is the first step toward registration as a Professional Engineer (PE). The basic mathematics, science and introductory Civil Engineering courses are virtually the same for all three programs during the first two years. The primary difference is the specialization in the junior and senior years.

The *Civil Engineering* (CE) degree offers specialization in:

- **Structural Engineering** - the planning, design and operation of buildings, bridges and special purpose structures such as towers, cranes, stadiums, and industrial plants.

- **Transportation Engineering** - the planning, design and operation of highways, airports, seaports, mass transit systems, traffic control systems, and material transport systems;

- **Geotechnical Engineering** - the design and planning of foundations, dams, tunnels, roadbeds, and other facilities where earth and rock are engineering materials; and
**Water Resources and Coastal Engineering** - the planning, design and management of projects for water supply, wastewater treatment, flood control, urban drainage, pollution control, ground and surface water quality management, and solid and hazardous waste disposal.

CE students also study construction materials, computing, systems and engineering mechanics.

The *Construction Engineering and Management* (CEM) degree offers specialization in:

**General Construction Concentration** - the planning, design and management of the construction process and resources required to build various facilities. This includes designing and erecting the temporary structures, utilities, and systems required for general building, residential, highway or heavy construction projects as well as understanding estimating, scheduling, cost engineering, legal aspects of construction, and management.

**Mechanical Construction Concentration** - the planning, design and management of the mechanical construction process emphasizing energy use and HVAC design of buildings and facilities. This degree is very similar to the General Concentration except that most of the design-oriented courses are in the Mechanical Engineering field instead of Civil Engineering.

The *Environmental Engineering* (ENE) degree specializes in developing engineered solutions to environmental problems. These problems are frequently complex and require a multidisciplinary approach. Students study the major challenges confronting environmental engineers including solid waste management, air pollution, water quality, water supply, wastewater treatment, hazardous waste, global health and public hygiene.

As a Civil, Construction, or Environmental Engineer, perhaps more than in any other field of engineering, you and your work will often be in public view, and your skills will be needed in all parts of the state, the nation and the world. Your individual talents and interests will strongly influence the directions in which you grow from your educational base.

A BSCE or BSENE graduate often takes a position with a consulting firm, a government agency or with industry, and will typically be exposed to a variety of assignments. At first, junior engineers often assist an experienced engineer in design and may be the designer's representative performing field inspections. As you "learn the ropes," you will have increased responsibility and you will work more "on your own."

A BSCEM graduate often takes a position with a general, mechanical or specialty contractor, a government agency, or with industry. You may expect to work initially in a variety of office and field assignments as you learn more about your employer's organization and construction systems. First assignments might include assisting in estimating, field engineering, or inspection and testing. Experience will lead to higher levels of responsibility in project management and control, finance, negotiations, and company management and leadership.

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