MAJOR IN CIVIL ENGINEERING

The undergraduate Civil Engineering program provides a solid base in the physical sciences, mathematics, engineering fundamentals, and design and management concepts. The All-University Core Curriculum (AUCC) (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/) provides a broad background in communication, liberal arts, humanities, and social sciences. In addition to offering courses in the various sub-disciplines of Civil Engineering, the Civil Engineering curriculum covers design practices, information technology, technical communications, project management, and engineering ethics. The program culminates in a year-long, term-based, senior capstone design experience. Preparation for high-level professional practice is emphasized. The Fundamentals of Engineering (FE) exam is the first step toward registration as a licensed Professional Engineer (PE), an important professional credential for civil engineers. Thus, students in this major are encouraged to take the FE exam prior to graduation.

Participation in internships, volunteer activities, professional organizations, and cooperative education opportunities is highly recommended to enhance practical training and development. Graduates who pursue advanced studies are prepared for higher level technical responsibilities.

The educational outcomes and objectives of this major can be found on the Department of Civil and Environmental Engineering website (https://www.engr.colostate.edu/ce/). The Civil Engineering major is accredited by the Engineering Accreditation Commission of ABET (http://abet.org).

Learning Objectives

Upon successful completion, students will be able to:

1. Identify, analyze, formulate, and design solutions to Civil Engineering problems, both independently and in a team environment;
2. Apply considerations of technical, legal, regulatory, social, environmental, and economic factors towards managing multi-faceted and multi-disciplinary projects;
3. Communicate effectively in both technical and non-technical settings with co-workers, professional clients, and the public; and
4. Demonstrate commitment and progress in lifelong learning, professional development, and leadership, including participation in continuing education courses, workshops, and/or graduate study, and the pursuit of licensure as a Professional Engineer.

Potential Occupations

Students who obtain a Bachelor of Science degree in Civil Engineering from CSU are prepared to solve some of the world's most challenging problems involving critical climate change, resiliency, and sustainability. Graduates will be able to repair, redesign, and rebuild aging infrastructure around the world, from highways and buildings to water systems and disaster mitigating structures. Employment opportunities will be plentiful for the foreseeable future.

Civil engineers are employed in many different organizations, including small and large consulting firms, local, state, and federal governmental agencies, and industrial companies such as construction, petroleum, mining, and aerospace firms. Civil engineers also may find opportunities in specialized design, research, and teaching.

Some possible job titles for graduates with a Bachelor of Science degree in Civil Engineering (BSCE) include, but are not limited to, civil engineer, transportation engineer, hydraulic engineer, water resources engineer, structural engineer, geotechnical engineer, geoenvironmental engineer, groundwater engineer, hydrologist, urban/regional planner, infrastructure engineer or manager, contract administrator, construction engineer or manager, building construction inspector, facilities engineer or manager, industrial transportation specialist, industrial designer/engineer, construction materials engineer, irrigation engineer, mining engineer, mining and petroleum research engineer, technical sales engineer, and educator.