Bachelor of Science
CIVIL ENGINEERING
CEE.MINES.EDU

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
The Department of Civil and Environmental Engineering produces graduates who can design and maintain sustainable built and natural environments in society. We offer two closely-related undergraduate programs: the bachelor of science in civil engineering and the bachelor of science in environmental engineering. Civil engineers focus more on the built environment, which includes buildings, roads, bridges, tunnels, reservoirs and water treatment facilities. Nationally, there are more civil engineers currently employed than in any other engineering profession.

$62,691 average starting salary for 2019-20 bachelor’s graduates*  
95% of 2019-20 BS graduates reported positive outcomes within six months*  
#2 Ranked university for return on investment®

PROGRAM SCOPE
DEGREES
- Civil Engineering Bachelor’s
- Civil and Environmental Engineering Master’s and PhD

EMPHASIS AREAS
+ Structural Engineering
+ Geotechnical Engineering
+ Water Resources Engineering
+ Engineering Surveying
+ Construction Engineering

STUDENT ORGANIZATIONS
- American Society of Civil Engineers
- Association of General Contractors

SAMPLE COURSEWORK
- Design of Steel Structures
- Design of Reinforced Concrete Structures
- Introduction to Construction Engineering
- Surveying for Engineers and Infrastructure Design
- Water & Wastewater Treatment Processes
- Civil Engineering Materials
- Foundation Engineering
- Hydrology and Water Resources Engineering
- Intro to Civil Infrastructure

*Per 2019-20 Mines Career Center Outcomes Survey; ®Money Magazine

COMBINED DEGREE PROGRAM
Students can earn a Master of Science in as little as one additional year of study when they begin work during their bachelor’s studies.
CIVIL ENGINEERING CAREERS

Civil engineering is incredibly broad and diverse; there are more licensed civil engineers than in any other field of engineering. Some alumni enjoy careers as traditional civil engineers — generalists that design the site topography, drainage and landscape. Others specialize in one of the areas highlighted below, or in other areas of civil engineering such as transportation or coastal engineering. The curriculum permits students to engage with the six fields detailed below and ultimately pursue a career that is perfectly aligned to their passion and skill set.

Seniors can earn course credit by participating in the ASCE Concrete Canoe competition (pictured), the ASCE Steel Bridge competition and a number of other challenging and fulfilling engineering design projects.

**STRUCTURAL ENGINEERING**
Structural engineers analyze and design buildings, bridges, towers, tunnels and more. They identify loads on a structure and then design steel, concrete, timber or masonry structures that can safely resist those loads. They also maintain and rehabilitate existing infrastructure.

**WATER RESOURCES**
Water resource engineers assess water supply in lakes, rivers, streams and underground locations in order to provide water for human use while minimizing impact to ecological systems. In this career track, engineers design water infrastructure such as dams, levees and canals.

**GEOTECHNICAL ENGINEERING**
Geotechnical engineers are responsible for using experimental and computational methods to assess the complex nature of soils and rocks that underlie a construction site. They are responsible for the overall foundation design of structures like buildings, bridges, tunnels and more.

**ENGINEERING SURVEYING**
Land surveying involves utilization of electronic distance measurement technology and GPS to establish the boundaries of a site and trace linear infrastructure routes. All civil engineering majors at Mines learn how to survey in the field and apply that knowledge in the digital domain.

**ENVIRONMENTAL ENGINEERING**
Environmental engineers balance human needs — such as clean drinking water and energy production — with environmental and ecological stewardship. These engineers are experts in air, water and soil. They protect these resources from the effects of industry.

**CONSTRUCTION ENGINEERING**
Construction engineers possess the skills to bring digital designs into the physical world. Construction engineers master scheduling, management and logistics to complete projects on time and under budget. They are experts in navigating the fast-paced and unpredictable world of construction projects.