BACHELOR OF SCIENCE IN ENGINEERING

EDS.MINES.EDU/BSE

DESIGN • INNOVATE • IMPACT YOUR WORLD

The Bachelor of Science in Engineering educates next-generation designers, innovators and impact makers who will be leaders in responding to the world’s most pressing problems.

The BSE is for students who have a passion to make a positive impact through designs that incorporate complex societal and environmental factors playing out at local, regional and global scales. BSE students want a flexible program that allows them to follow their individual interests, while still providing a foundation in engineering that enables further studies or careers in engineering innovation, medicine, policy, law, economics or related areas.

Unique program characteristics

The BSE’s design focus provides hands-on experiences from the start of your education, including working on real-world challenges in interdisciplinary teams and mastering all phases of problem definition, concept generation and solution implementation.

Earning a BSE at Mines means you will develop deep expertise in integrative design, which enables you to bridge traditional problem-solving approaches to engineering, creative design and social sciences.

BSE FEATURES:

+ The strength of a Mines technical degree with fundamentals coursework in mathematics, science and engineering;
+ Education in integrative design, bridging technical, creative and contextual problem solving;
+ A diverse set of hands-on project experiences, culminating in a two-semester, client-sponsored Capstone design project;
+ A range of focus areas that allow you to apply your design skills to a specific area of practice.

BSE FOCUS AREAS:

- Energy studies
- Water security
- Community development
- Robotics and automation
- Music, audio engineering & recording arts
- Corporate sustainability
- Individualized focus area customized around your interests and passions

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INTEGRATIVE DESIGN STUDIOS

The core of the BSE curriculum is a multi-year sequence of project-based design studios that integrate technical, creative and contextual aspects of the design challenge. These studios provide design methodologies that apply broadly to technical problem solving and span all of the program’s focus areas. A human-centered design perspective incorporates social, political, environmental and economic dimensions of the design context, leading to more meaningful solutions.

DEGREE QUALITIES:

- Projects and coursework supporting student passions
- Integrative design as the primary instructional approach
- Career preparation beyond traditional engineering disciplines
- Curricular flexibility allowing students to chart their own paths

Competencies:

- Technical engineering
- Creative design problem solving
- Social contexts and sustainability
- Systems innovation
- Professional skills including leadership, entrepreneurship and interdisciplinary collaboration

LIFE AFTER MINES

BSE graduates can chart their own futures. They will be technically skilled, experienced with innovating in real-world contexts, able to collaborate across diverse disciplines and ready to lead and innovate in any organizational setting.

In addition to traditional engineering or design careers in technology and product-based industries, BSE graduates are ideal candidates for government agencies, NGOs and technology-based start-ups, and they are uniquely suited to contribute technical design expertise to the fields of healthcare, policy, law and finance.