Bachelor of Science in Engineering

Undergraduate major: BSE

Website: https://engineering.uiowa.edu/

The Bachelor of Science in Engineering (BSE) degrees with majors in biomedical, chemical, civil, electrical, environmental, industrial, and mechanical engineering are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). The computer science and engineering program is accredited by the EAC and the Computing Accreditation Commission (CAC) of ABET.

Each program has its own set of articulated educational objectives, while all programs are designed to ensure that graduates possess the following at the time of graduation:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
- an ability to communicate effectively with a range of audiences;
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions; and
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Computer science and engineering majors will be able to do each of the following as they relate directly to computing:

- analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions;
- design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline;
- communicate effectively in a variety of professional contexts;
- recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles;
- function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline; and
- apply computer science theory and software development fundamentals to produce computing-based solutions.

Each program emphasizes a broad understanding of fundamental principles common to all engineering disciplines and provides students with the opportunity to specialize in a selected engineering discipline. All programs build on the university's research strengths. Program flexibility is provided by a curriculum in which each student develops engineering competency within a particular academic program and complements it with a tailored thematic option in support of chosen career objectives—for example, engineering practice, project management, research, and development.

This section of the catalog provides information about requirements that all BSE students must fulfill, regardless of their engineering major, as well as admission information.

Engineering students may earn more than one BSE degree. They also may combine undergraduate degree programs to earn a BSE and a degree in the College of Liberal Arts and Sciences or the Tippie College of Business, or a combined BSE/MS in urban and regional planning, or a combined BSE/MS in engineering; see "Combined and Dual Degrees" in the Bachelor of Science in Engineering, BSE section of the catalog.

Undergraduate Majors, Minors, and Certificates

Majors

The College of Engineering has six departments and offers eight undergraduate BSE majors. View the BSE majors under each of the College of Engineering departments in the catalog.

Minors

The College of Engineering does not offer a minor. Engineering students may earn minors in a number of programs offered by other undergraduate colleges at the University of Iowa. For descriptions of minors and their requirements, view Find Your Program on the General Catalog website and select "undergraduate minors."

Certificates

The College of Engineering offers three undergraduate certificate programs. Engineering students also may earn certificates offered by colleges across the university. The College of Engineering partners with the Tippie College of Business to offer the Certificate in Technological Entrepreneurship, which is tailored specifically for engineering students who intend to start and operate their own business or who would like to understand and learn about managing innovation in business environments. The college also offers the Certificate in Artificial Intelligence, Modeling and Simulation in Engineering and the Certificate in Naval Science and Technology. Other certificates of particular interest to engineering students include the Certificate in International Business (Tippie College of Business) and the Certificate in Sustainability (University College). For descriptions of certificates and their requirements, view Find Your Program on the General Catalog website and select "certificates."

Cooperative Education and Internship Program

The Cooperative Education and Internship Program supports students as they explore and develop their careers through periods of professional practice. These are professional, engineering-related experiences in business, industry, education, or government that are recognized by the College of Engineering. Experiences range from 10-week summer internships to multiterm co-ops. Students find co-ops and internships in several ways, including career fairs, job search

websites, applying directly through the company's website, networking, personal connections, and Handshake (the University of Iowa’s primary online recruiting system).

All students in the College of Engineering are eligible to participate in the co-op and internship program upon completion of one full semester at the university. Students are encouraged to begin their search early so that they may acquire a co-op or internship experience starting the summer after their first or second year. Students complete co-op and internship assignments at many companies around the country.

Internships and co-ops may be documented on the transcript when students follow the appropriate registration steps. For further details, see Engineering Career Services on the College of Engineering website.