Computer Science and Engineering, BSE

The Bachelor of Science in Engineering (BSE) program in computer science and engineering combines the technical content of a computer science degree and a computer engineering degree in a single degree program. The program curriculum is jointly taught by faculty from the Department of Electrical and Computer Engineering and the Department of Computer Science (College of Liberal Arts and Sciences). The program provides students with a strong theoretical and conceptual understanding of the principles underlying computer software and hardware along with the engineering analysis, design, and multidisciplinary teamwork skills needed to develop large and complex systems containing both software and hardware components.

The computer science and engineering program encompasses the technical rigor of a Bachelor of Science program in computer science and a Bachelor of Science program in computer engineering. This major is jointly accredited in computer science and computer engineering by the Accreditation Board for Engineering and Technology (ABET). Graduates gain the foundational knowledge provided by a computer science education together with the critical thinking, problem-solving, and system design skills at the heart of a computer engineering curriculum.

The major provides technical depth and breadth as well as flexibility and the opportunity for students to customize their programs according to their own goals and interests. Students choose one of several focus areas according to the type of job or research they plan to pursue; students also have the opportunity to work with their academic advisor to build a focus area plan that adheres to their goals and interests. Students select a focus area to personalize their curriculum and to prepare them for certain jobs or research studies they intend to seek.

In their senior year, students complete a two-semester capstone design sequence culminating in the development and implementation of a significant, original project. The capstone design experience emphasizes teamwork, professionalism, open-ended problem solving, and the ability to work within real-world constraints and engineering standards.

Programs designed to lead to professional licensure are subject to federal regulations regarding informational disclosures. Please see Professional Licensure Disclosures by Program for further information.

Educational Objectives

Graduates of the computer science and engineering program will:

- exhibit leadership and vision in contributing to the computing-related technical and policy decisions of industry, government, and research enterprises;
- demonstrate computing skills and problem-solving abilities that permit them to contribute in a variety of technical, business, and academic careers;
- thrive in diverse, global, and multidisciplinary environments;

- possess the ability to communicate effectively and participate collaboratively in interactions with other computing and engineering professionals; and
- understand the importance of participating in lifelong learning activities that enhance their professional and personal development.