Curriculum Overview

The BS degree in Civil Engineering is accredited by the Engineering Commission of ABET (abet.org) and prepares students for graduate study and/or professional practice.

[FRESHMAN-SOPHOMORE]

The first two years of study build the basic science and mathematics skills needed for the practice of civil engineering: physics, chemistry, earth science (geology), math through calculus and differential equations, mechanics of rigid and deformable bodies, materials, graphics, CAD, BIM, and computer programming. These courses give a solid foundation in problem solving and analytical thinking, which are essential for civil engineering students.

[JUNIOR]

The third year builds on the basic science courses and provides two-class sequences in each of the following sub-disciplines of civil engineering: structural engineering, geotechnical engineering, water resources engineering, transportation engineering, and environmental engineering. Hands-on laboratories build practical skills from the classroom instruction.

[SENIOR]

With the background acquired in the junior year, students are equipped to take design classes and to engage in the professional practice/capstone design sequence. Students can pursue a specialization track by choosing relevant technical electives in one of the sub-disciplines introduced in the junior year.

[BS CIVIL ENGINEERING/MBA STUDENTS]

Students in the joint BS Civil Engineering/MBA program will take primarily business classes in the senior year, and complete their professional practice/capstone design sequence in the fifth year of study.

Did You Know?

You can get paid to go to graduate school. Many of our graduates choose to continue their studies at UB or attend other top tier universities, such as MIT, Purdue, Carnegie Mellon, UC Berkeley, UT Austin and Texas A&M. Top graduate students at UB may receive tuition scholarships and a stipend to support their studies.
Learning by Experience
The School of Engineering and Applied Sciences places significant emphasis on experiential learning, the goal of which is to offer students a greater understanding of their options as they decide on their post-UB careers, and increase their preparedness for entering the engineering profession. Experiential learning initiatives include internships, engineering intramurals, job shadowing, and senior capstone design projects.

Undergraduate Research
Undergraduate students in civil engineering can gain research experience under the mentorship of our faculty members. Participating in undergraduate research provides students with an inquiry-based learning opportunity and engages them as active learners in a laboratory setting.

Student Excellence
After receiving her BS in civil engineering, Ariana Fay will pursue a master’s in civil engineering, with a concentration in structural and earthquake engineering. She initially began studying civil engineering because of her interest in transportation. After touring the department’s earthquake lab as a sophomore, and an internship in between her junior and senior years, Ariana says she became more interested in structural and bridge engineering. In addition to the lab, she has been able to conduct research and attend an international conference as an undergraduate student, through her work ethic and faculty members within the Department of Civil, Structural and Environmental Engineering.

World-Class Faculty
The department continues to enhance its academic strengths and research portfolio with the addition of nine new faculty members in the past two years in the areas of structures, geotechnics, transportation, and water resources and environmental engineering.

Assistant Professor Teng Wu joined CSEE in 2014 following the completion of his PhD in civil engineering at the University of Notre Dame. His research addresses the effects of extreme winds on the built environment, with an emphasis on bridges. He is building basic knowledge of wind effects using computational fluid dynamics, predicting the impact of wind hazards on constructed facilities, and developing wind-response mitigation strategies to improve safety and serviceability.

Student Clubs and Activities
Our students are engaged in a variety of campus-wide activities and organizations. Some of the more popular clubs for civil engineering students include the student chapter of the American Society of Civil Engineers, featuring the annual Steel Bridge and Concrete Canoe design teams, and Engineers for a Sustainable World. Involvement in these clubs enriches the academic experience and provides students with strong leadership opportunities, along with some great memories.

Successful Alumni
Jaclyn Bronner, EIT, (BS, 2014) is pursuing her Master of Science in Civil Engineering with a focus in Geotechnical and Geoenvironmental Engineering at the University of California, Davis. Her research interests are centered on the liquefaction potential of intermediate soils utilizing geotechnical centrifuge modeling. Bronner, who served as president of the UB chapter of the Society for Women Engineers, continues to be active with the organization, which aims to help women achieve their full potential in careers as engineers and leaders.

Michael Marino (BS, 1996) is the CEO at Nussbaumer & Clarke, Inc., a multi-disciplinary engineering and land surveying firm with offices located throughout Western New York. He has been with the company for two years in an ownership role, and provides oversight on a number of the company’s larger projects. During his final semester, Marino participated in two UB programs that would eventually help jumpstart his career. He became co-captain of the UB ASCE concrete canoe team, and was hired by a local engineering firm after signing up for the university’s internship program. Marino still utilizes the connections and skills he earned while enrolled at UB in his professional career.

CONTACT INFO
M. V. Sivaselvan
Director of Undergraduate Studies, Associate Professor
716.645.4070
mvs@buffalo.edu

Éva McGovern
Undergraduate Academic Coordinator
716.645.4352
cseeug@buffalo.edu

To apply, please visit admissions.buffalo.edu