DEPARTMENT OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

BS in Environmental Engineering

Facts About CSEE@UB
- Full-time faculty: 29
- Typical CSEE class size: 30-120
- 35,000 square feet of teaching and research labs
- $5.5 million in annual research expenditures
- National average starting salary: $55,000

Degrees offered:
- BS in Environmental Engineering
- BS in Civil Engineering
- A 5-year combined BS Civil Eng./MBA
- MS and PhD in Civil Engineering

Environmental Engineers Shape the World
Environmental engineers work at the interface of society and the environment, striving to protect both human and ecosystem health. We help make water safe to drink, air clean to breathe, and restore water quality in the Great Lakes and throughout the world.

Today, environmental engineers face issues that are changing the world. With their unique combination of environmental science and engineering, environmental engineers are the linchpins in developing solutions to global climate change and alternative energy sources. From preventing waterborne diseases in the most remote village to protecting air quality at home, environmental engineers defend the global public health and ecosystem viability.

Careers for UB CSEE Grads
According to the U.S. Bureau of Labor Statistics, employment for environmental engineers is projected to increase by 15% through 2020. Graduates can choose from a broad spectrum of opportunities in industry, governmental agencies, private consulting firms, and construction companies, as well as in research and development. Many graduates return to school to pursue advanced degrees. A few go on to complete their PhD and obtain positions in academia.

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

Freshman–Sophomore
During the first two years of study, the environmental engineering curriculum provides for the development of fundamental knowledge and skills in the basic sciences (chemistry and physics) and applied sciences (environmental microbiology and environmental chemistry), mathematics through differential equations, and basic engineering (engineering principles, statics and mechanics, and CAD). Introduction to environmental engineering is included early in the curriculum, in the fall of the sophomore year. These courses give a solid foundation in problem solving and analytical thinking, which are essential for environmental engineering students.

Junior
In the junior year, this development is supplemented by courses in civil engineering (fluid and soil mechanics, hydraulics, statistics, and surveying), program-specific environmental engineering courses (ecological engineering and sustainability), an applied biological science course (ecology), and two lab courses where hands-on laboratories build practical skills from the classroom instruction.

Senior
During the senior year, students complete a sequence of advanced courses: hazardous and solid waste management, hydrologic and groundwater engineering, and treatment process engineering. Professional practice issues are covered in the fall semester, followed by capstone design in the spring semester. An earth science elective and two technical electives are included as well. Students may select technical electives from engineering and a wide range of supporting programs.

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, Carnegie Mellon, Stanford, Cornell, and Texas A&M. Top graduate students at UB receive tuition scholarships and a stipend to support their studies.

Environmental engineering students in the lab.
Learning by Experience

The School of Engineering and Applied Sciences places significant emphasis on real-world experience. Experiential learning initiatives include:

- Internships
- Engineering Intramurals
- Job Shadowing
- Senior Capstone Design Projects and Design Expo
- Undergraduate Research

Student Excellence

Alexandra Leader, a senior, attributes her love of the outdoors as a major factor in pursuing a career in environmental engineering. “I think when you’re constantly outside surrounded by the environment it reminds you that it’s something you want to take care of and protect,” she says. Leader is a member of the University Honors College and participates in Engineers for a Sustainable World. She interns with the UB Office of Sustainability, promoting sustainability around campus through recycling and energy conservation programs. In 2015, she was awarded scholarships from the American Water Works Association and American Council of Engineering Companies of New York.

Student Clubs and Activities

Our students are engaged in a variety of campus-wide activities and organizations. Some of the more popular clubs for environmental engineering students include the student chapter of Engineers for a Sustainable World, and the student chapter of the American Society of Civil Engineers. Involvement in these clubs enriches the academic experience and provides students with strong leadership opportunities, along with some great memories.

To apply, please visit http://admissions.buffalo.edu.

Faculty

The department continues to enhance its academic strengths and research portfolio with the addition of 12 new faculty members in the past three years in structures, bridge engineering, geotechnics, transportation, and water resources and environmental engineering.

Assistant Professor Ning Dai joined the department in 2014, after receiving her PhD in Chemical and Environmental Engineering at Yale University. Dr. Dai is interested in exploring organic nitrogen chemistry in both engineered and natural environmental systems. Her current research areas include the formation mechanisms and prevention strategies for byproducts from post-combustion CO2 capture system, disinfection byproducts, and the environmental fate of organonitrogen pesticides. She believes that better understandings in these processes will provide us with more systematic and sustainable solutions for environmental problems.

Successful Alumni

Cassy Edwards (BS, 2014) is an Associate Engineer of Environmental and Clean Air Compliance at National Fuel. Her main responsibilities include air permitting and continual compliance for natural gas compressor stations. Through her work with National Fuel, she has gained experience not only in air compliance but also in engine operation and maintenance, emission testing, and the properties and regulation of natural gas.

Upon completion of the BS program, Luke Scannell (BS, 2011) stayed on at UB to pursue his PhD in Water Resources and Environmental Engineering. As a Teaching Assistant, Scannell receives a stipend towards his tuition. His research is focused on drinking water treatment and the remediation of contaminants, especially by renewable and efficient means. Recently, he was awarded Engineering Mentor of the Year at the Future City Competition for his volunteer work with Mills Middle School.

CONTACT INFORMATION

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