



# Environmental Engineering

## MASTER OF SCIENCE

### A DEGREE FOR ENVIRONMENTAL TRANSFORMATION

The Master of Science in Environmental Engineering is based on the department's teaching and research focus in fate and transport, and treatment of relevant environmental pollutants in both natural and engineered systems. The program offers coursework and research opportunities that cover the physical, chemical, and biological aspects of environmental engineering and science, while also incorporating modern professional topics that intersect diverse engineering disciplines including energy, resource recovery, urban systems, industrial ecology, and product life cycles.

Students learn advanced environmental engineering principles and applications, providing the core skills necessary for a career in the field. The program will prepare students for a variety of career options in academic, industrial, and government settings, providing resilient solutions to ensure a clean and sustainable environment.

**Educational objectives.** A student completing the Master of Science in Environmental Engineering will display a high level of engineering knowledge in a broad range of environmental engineering topics with the paradigm shifts and reforms visions in environmental monitoring, regulation and treatment technology development, with a primary focus on the study of environmental pollution and treatment, resources and energy recovery, and environmental and human health. Upon completion of the degree, students will possess the skills to assess the quality of water, soil, and air resources with respect to environmental pollution regulations; to understand the physical, chemical, and biological processes that influence pollution behavior in the environment; and to engineer treatment processes that maintain or improve environmental quality.

Graduate coursework is designed to instruct students on environmental science fundamentals and engineering design principles, to improve problem-solving skills, to utilize state-of-the-art data analysis and computational analysis, and to enhance oral and written communication skills. Students will also have the opportunity to participate in Northeastern's world-renowned co-op program by undertaking a professional experience at local engineering firms or professional organizations. Research opportunities may be available within and outside the department and college, with involvement and access to both CEE and interdisciplinary research centers, facilities, and state-of-the-art research laboratories such as the Marine Science Center; George J. Kostas Research Institute for Homeland Security; Center for High-rate Manufacturing; The Barnett Institute of Chemical, and Biological Analysis; and Environmental Organic Chemistry, Analytical and Biotechnology/ Genomics Laboratories, among others.

**Course requirements.** The program of study can be taken on a full time or part time basis. It consists of a set of five core courses in (1) environmental chemistry, (2) environmental biological processes, (3) environmental physical/chemical processes, (4) water engineering, resources, and energy recovery, and (5) hydrological modeling; as well as 12 credits from other electives courses in civil and environmental engineering, environmental science, industrial engineering, and mathematics, as well as others that are distributed over additional graduate programs at the University. A minimum of 32 SH of coursework are needed for graduation. Both coursework-only and Master's Report or Thesis degree options are available.

Northeastern University  
College of Engineering

### CONTACT

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### CO-OP/CAREERS

- Oak Ridge National Laboratories
- Buro Happold
- FM Global
- CH2M Hill
- CDM Smith
- Parsons Brinckerhoff
- Massachusetts Water Resources Authority
- Massachusetts Department of Transportation

### RELATED RESEARCH LABS

- Environmental Ecosystems Lab
- Coastal Hydrodynamics Lab
- Environmental Organic Chemistry Lab
- Clean Air, Smart Cities, and Digital Earth Lab



With over 180 tenured/tenure-track faculty, 17 multidisciplinary research centers and institutes, and funding by eight federal agencies, the College of Engineering is a leader in experiential education and interdisciplinary research, with a focus on discovering solutions to global challenges to benefit society.

## Northeastern University

Founded in 1898, Northeastern is a global research university and the recognized leader in experience-powered lifelong learning. Our world-renowned experiential approach empowers our students, faculty, alumni, and partners to create impact far beyond the confines of discipline, degree, and campus.

Our locations—in Boston; the Massachusetts communities of Burlington and Nahant; Charlotte, North Carolina; London; Portland, Maine; San Francisco; Seattle; Silicon Valley; Toronto; and Vancouver—are nodes in our growing global university system. Through this network, we expand opportunities for flexible, student-centered learning and collaborative, solutions-focused research.

Northeastern's comprehensive array of undergraduate and graduate programs—in on-campus, online, and hybrid formats—lead to degrees through the doctorate in nine colleges and schools. Among these, we offer more than 140 multidisciplinary majors and degrees designed to prepare students for purposeful lives and careers.