

## Advancing Civil Engineering

ASCE seeks to advance the civil engineering profession and protect the public welfare by actively



supporting the need for additional education and relevant experience for future professional practice as a civil engineer.

Source: [https://www.asce.org/advanced\\_education](https://www.asce.org/advanced_education)

**A need for expanded knowledge**—Civil engineers need greater breadth and depth of knowledge, but that becomes increasingly difficult as that body of engineering knowledge continues to explode. Civil engineers must deal with an ever-growing number of technical, environmental, and social factors to address infrastructure challenges.

**Society expects more**—Every other learned profession has recognized the need to require education beyond the bachelor's degree as its body of knowledge expanded. The time has come for engineering—with its broad impact on public health and safety—to recognize that need as well.

**Current education hours are insufficient**—The credit hours required to earn the traditional four-year undergraduate engineering degree have decreased significantly, from more than 145 in 1950 to about 128 today. The expanding technical and professional knowledge required by engineers will no longer fit in this shrinking curriculum.

**Enhanced leadership skills**—Civil engineers with enhanced technical, leadership, communications, and business skills will give the profession more effective project teams, generating improved operations and service. That becomes particularly important to a civil engineering employer.

## Application Information

### University of Maine Graduate School

Online application portal:

[umaine.edu/graduate/apply](http://umaine.edu/graduate/apply)

Or write: [graduate@maine.edu](mailto:graduate@maine.edu)

**Application Deadline: Rolling**  
**Civil and Environmental Engineering**  
**Graduate Program Inquiries:**  
[cie.graduate@maine.edu](mailto:cie.graduate@maine.edu)

## Contact Information

### Department of Civil and Environmental

### Engineering

5711 Boardman Hall  
University of Maine  
Orono, ME 04469-5711 USA

[cie.graduate@maine.edu](mailto:cie.graduate@maine.edu)  
[civil.umaine.edu](http://civil.umaine.edu)

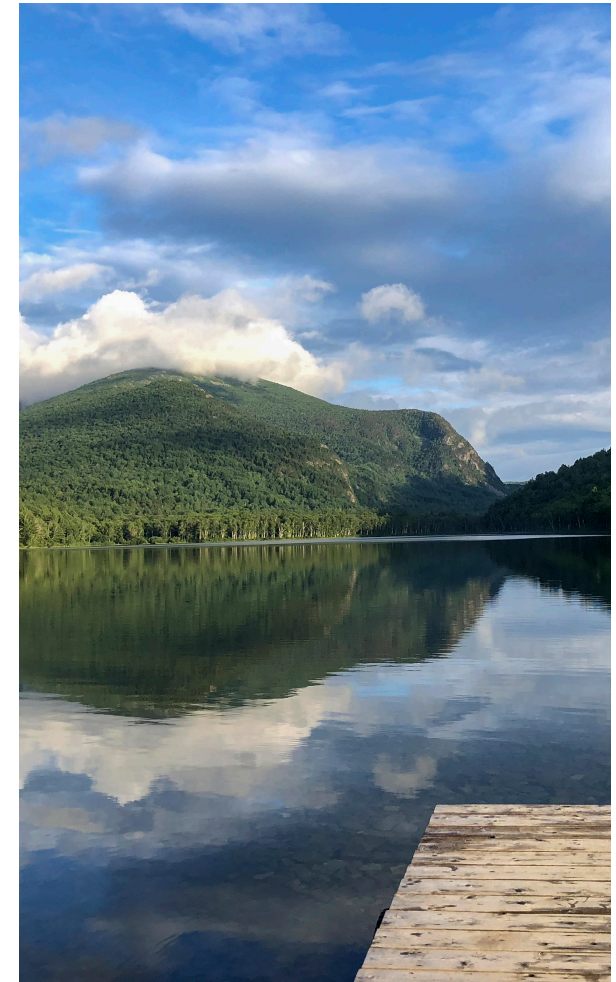
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**College of Engineering**  
*Civil and Environmental Engineering*

**MASTER OF ENGINEERING**  
**in Civil Engineering**  
*with a concentration in*

## Water and Environment



Baxter State Park

## Program

The University of Maine's Department of Civil and Environmental Engineering (CIE) has designed an innovative Master of Engineering (ME) degree in Water and Environment. The ME is a fast-track graduate degree program designed to equip students with advanced knowledge in the areas of water and environment. Courses are designed to cover modeling, analysis, and design aspects of engineering and scientific problem solving. Students gain skills critical to success in their future career, and also earn credit toward professional engineering licensure.

Students complete a core graduate curriculum in civil and environmental engineering, and gain broader knowledge through coursework in related disciplines. Departmental faculty bring fresh perspectives from their research programs on issues ranging from water sustainability, declining water quality in lakes and rivers, innovative approaches to waste management, viability analyses for marine renewable energy systems, assessing flow around aquaculture farms, and new models for water infrastructure design in a changing climate.



## Coursework

The Master of Engineering degree requires successful completion of 30 credits of approved courses. Students with an undergraduate degree in engineering or related fields may receive approval to carry over up to nine credits from their previous degree. A minimum of 12 credits of coursework must be completed at the 500-level. Students must complete a minimum of 15 credits of coursework from the approved CIE courses (below). The remaining credits allow students to tailor their graduate program and augment training through courses in diverse areas, including Earth and Climate Science, Marine Sciences, Mathematics and Statistics, and Spatial Information, to name a few.

Approved CIE Courses (Minimum 15 credits)
CIE 430 Water Treatment
CIE 431 Pollutant Fate and Transport
CIE 434 Wastewater Treatment
CIE 439 Solid Waste and Air Pollution
CIE 450 Open Channel Hydraulics
CIE 455 Hydrology
CIE 456 Groundwater Hydrology and Hydraulics
CIE 533 Aquatic Environmental Chemistry
CIE 534 Environmental Microbiology
CIE 537 Water Pollution
CIE 551 Water Wave Mechanics
CIE 552 Physical Hydrology
CIE 553 Water Resources Sustainability
CIE 554 Natural System Hydrodynamics
CIE 555 Computational Methods in Water Resources Eng.
CIE 558 Coastal Engineering
CIE 559 Marine Turbulence
CIE 598 Special Topics in Environmental Eng.

## Faculty



**Onur Apul, Ph.D.**

Expertise: Water Chemistry, Sustainable Water Treatment, Environmental Nanotechnology



**Kimberly Huguenard, Ph.D.**

Expertise: Coastal Engineering, Turbulence and Mixing in Estuaries, River Plumes, Storm Surge, Circulation and Material Transport, Aquaculture Applications.



**Shaleen Jain, Ph.D., PE**

Expertise: Hydrology and Water Resources Engineering, Hydroclimatology, Environmental Sustainability, Data Analytics, Risk and Decision Analysis



**Jean MacRae, Ph.D.**

Expertise: Biological Treatment of Solid and Aquaculture Waste for Resource Recovery, Biogeochemistry of nutrients and pollutants, Environmental Microbiology.



**Lauren Ross, Ph.D.**

Expertise: Estuarine, Fjord and Coastal Hydrodynamics, Material Transport in Estuaries, Marine Renewable Energy, Physics of Waves and Tides.