

CornellEngineering

Department of Biological and Environmental Engineering and School of Civil and Environmental Engineering

ENVIRONMENTAL ENGINEERING UNDERGRADUATE DEGREE PROGRAM

Are you interested in environmental engineering? A stream of stories in the news document environmental concerns. Increasingly complex and coupled scientific and social issues call for creative and well-trained environmental engineers.

The world needs people who have a sense of purpose and a first-class engineering education, who are prepared to tackle modern environmental problems and sustainability issues. Whether assessing the threat of pollutants to an ecosystem, or the treatment needed to provide safe water supplies, environmental engineers play a crucial role. And that's where Cornell's College of Engineering comes in. We will provide you with an education that will allow you to be a voice of reason and science, so you can take a leading role in the resolution of current and emerging environmental concerns.

**BREAK
THE RULES to
IMPROVE THE
QUALITY of LIFE
on OUR PLANET**

Environmental engineers seek ways to mitigate human impacts on the environment, generate energy from renewable resources, and protect public health. They analyze the transport, reactions, and effects of land-, water-, and air-pollutants, design pollution and hazardous waste-control facilities, and oversee the construction and operation of such facilities. They play important roles in city planning, developing water-resource systems, and designing and operating other systems fundamental to preserving our quality of life and the quality of the environment. They are also involved in the development and management of renewable energy sources. Environmental engineers design systems that can turn waste into electricity and other fuels. Environmental engineers design solutions to problems with long-term sustainability and global impacts in mind.

Your Cornell education will address current problems, so you will have the opportunity to act on issues that professional engineers face every day. You will work closely with faculty members—established leaders in the field—who are addressing cutting-edge issues in their research and consulting.

In addition to studying chemistry and physics, as an environmental engineering student you will study biology, microbiology, fluid mechanics, and hydrology. You will learn to employ biological, chemical, and engineering principles to model the effects of human activities on environment quality, or to help you design drinking water-treatment and wastewater-treatment systems. One example is our multi-disciplinary AguaClara program which involves students in the

ENVE REQUIRED COURSES

BEE 2510	Engineering for a Sustainable Society
CEE 3510	Environmental Quality Engineering
CEE 4510	Microbiology for Environmental Engineering
CEE 3310	Fluid Mechanics
CEE 3040	Uncertainty Analysis in Engineering
BEE 4270	Water Measurement and Analysis Methods
or	
CEE 4530	Laboratory Research in Environmental Engineering
or	
CEE 4370	Experimental Methods in Fluid Dynamics
BEE 4750	Environmental Systems Analysis
BEE 4890	Entrepreneurial Management for Engineers
or	
CEE 3230	Engineering Economics and Management
BEE 2220	Bioengineering Thermodynamics and Kinetics
or	
CEE 3200	Engineering Computation
or	
ENGRD 2210	Thermodynamics
ENGRD 2020	Statics and Mechanics of Solids
College Biology Courses	
Earth Science Courses (addressing hydrology, geology, or climate)	
Senior-Level Environmental Engineering Courses	

ENVIRONMENTAL
ENGINEERING



SOME AREAS OF FACULTY RESEARCH

aquatic chemistry

application of molecular biology to microbial populations

atmospheric chemistry and climate modeling

contaminant transport, fate, and remediation

environmental systems

fluid mechanics and hydrology

renewable energy systems

sustainable resource management

sustainable water treatment processes for developing countries

waste conversion to bioenergy

water-resource systems

watershed modeling

design of sustainable and affordable water treatment systems for underdeveloped areas around the globe. Systems designed by Cornell undergraduate students are currently providing safe drinking water to more than 50,000 people. In laboratories, you will examine current environmental problems, mitigation technologies, and opportunities for energy generation from renewable resources (wind, water and biofuels). Many of those problems are the focus of Cornell faculty research. You will study environmental systems in which mathematical models are used to optimize complex water resource networks or to create designs for environmental remediation.

The environmental engineering (EnvE) major is offered jointly by faculty members in biological and environmental engineering (BEE) and in civil and environmental engineering (CEE).

MASTER OF ENGINEERING DEGREE PROGRAM

Students wishing to pursue a master of engineering (M.Eng.) degree in environmental engineering can solve problems that are closely related to either civil engineering or biological engineering. On the civil engineering side—clean water, efficient transportation systems, urban renewal, rural development—civil and environmental engineers strive for harmony and balance between the constructed human environment and the natural world. Every aspect—including design, development, creation, operation, and renewal—is aimed at protecting the public while preserving the health of the natural environment.

On the biological engineering side—a rapidly growing field where engineering practice meets quantitative biology—engineers work toward practical, sustainable solutions to a wide variety of human health and environmental challenges. Whether you study biofuels development, sustainable agriculture, soil and water systems, or applied molecular bioengineering, as an M.Eng. graduate, you will be highly sought after by employers in both the public and private sectors.

EnvE By the Numbers

EnvE undergraduate students	109
College of Engineering	38
College of Agriculture & Life Sciences	71
EnvE graduate students	40

Starting salaries of B.S. environmental engineering graduates (for 2018)

Low	\$38,000
Median	\$72,500
High	\$108,000

ENVE SAMPLE ELECTIVE COURSES

BEE 3710	Physical Hydrology for Ecosystems
BEE 4010	Renewable Energy Systems
BEE 4110	Hydrologic Engineering in a Changing Climate
BEE 4710	Introduction to Groundwater
BEE 4730	Watershed Engineering
BEE 4760	Solid Waste Engineering
BEE 4800	Our Changing Atmosphere: Global Change and Atmospheric Chemistry
BEE 4870	Sustainable Bioenergy Systems
CEE 1130	Sustainable Engineering of Energy, Water, Soil and Air Resources
CEE 4110	Applied Remote Sensing and GIS for Resource Inventory and Analysis
CEE 4320	Hydrology
CEE 4350	Coastal Engineering
CEE 4370	Experimental Methods in Fluid Mechanics
CEE 4520	Sustainable Safe Water on Tap
CEE 4530	Laboratory Research in Environmental Engineering
CEE 4565	Waste Water Processes and Resource Recovery
CEE 6200	Water-Resources Systems Analysis
CEE 6550	Transport, Mixing, and Transformation in the Environment
EAS 4570	Atmospheric Air Pollution
MAE 4020	Wind Power



Cornell University is an equal-opportunity affirmative-action educator and employer. Produced by the Office of Engineering Admissions.

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