NC STATE Engineering

DEPARTMENT OF CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING

Environmental Engineering Degree Program

INTRODUCTION TO THE PROFESSION

Society's concern for the environment has never been greater, and the environmental engineer plays a key role in the protection of our planet and human health. Environmental engineers develop sustainable solutions for preventing pollution and conserving resources, thereby keeping our air, water, and land clean and safe. Engineering solutions can be local, regional, or global in nature, with projects ranging from protection of local streams through advanced wastewater and storm water treatment, to the design of energy recovery systems for regional solid waste facilities, to management of transboundary air quality through pollutant emission controls.

The National Academy of Engineering has identified several Grand Challenges for the 21st Century related to environmental engineering, including provision of clean water, managing the nitrogen cycle, and mitigating climate change – both locally and internationally. To keep up with these and similar demands, the U.S. Bureau of Labor Statistics projects that job growth in environmental engineering will outpace many other engineering fields. If you are interested in the following types of activities, you should consider becoming an environmental engineer:

- Understand the nature of contaminants and their fate in air, water, and land; assess pollution impacts on the environment and public health.
- Develop and propose innovative engineered solutions to prevent and treat wastes and to convert and recycle waste products to energy and other valuable resources.
- Sustain coastal and freshwater resources, manage urban water systems, and protect communities from floods and droughts.
- Ensure the sustainability of multiple types of engineering projects, considering energy and climate, air and water quality, and human health.
- Advance global public health through sustainable deployment of water, sanitation, and hygiene (WASH) infrastructure serving communities in the developing world.
- Perform all of these tasks using strengths in the physical, chemical, biological, and computational sciences.

BACHELOR OF SCIENCE IN ENVIRONMENTAL ENGINEERING

The Environmental Engineering (ENE) degree was first offered at NC State in 1992 in recognition of the specialized training in both the sciences and engineering that are desirable for practice as an environmental engineer. NC State is the only public university in North Carolina offering an accredited undergraduate environmental engineering degree. The ENE degree is administered through the Department of Civil, Construction, and Environmental Engineering (CCEE). More details can be found at: ***ccee.ncsu.edu***.

CURRICULUM

Our ENE curriculum empowers students to address a wide range of environmental challenges through laboratory investigation, computational analysis, and environmental systems design. The curriculum begins with courses in the physical, chemical, biological, and earth-systems processes necessary to understand complex environmental problems. Next, students learn engineering approaches to minimize pollution, treat liquid and solid wastes, recover resources, and manage water systems. In the senior year, students take advanced courses in air pollution control, energy and climate, solid waste management, water resources engineering, and a complex multi-media design project. Additional details on the ENE curriculum can be found at: ***www.ccee.ncsu.edu/academics/undergraduate-programs#environmental-engineering***.

STUDENT OPPORTUNITIES

ENE students have access to a wide variety of scholarships, undergraduate work experiences, undergraduate research, student organizations, and study-abroad programs. For additional information on these programs, see the CCEE undergraduate programs brochure: ***go.ncsu.edu/ccee_ugp***. With nearly 20 ENE faculty members, there are many opportunities for students with solid academic performance to get involved in cutting-edge research. There are also many student organizations with environmental themes, including the Air and Waste Management Association (AWMA), Engineers Without Borders (EWB), and the Water Environment Association (WEA).

JOB OPPORTUNITIES

ENE graduates are recruited by consulting firms, industry, and government. In addition, our graduates have a high success rate on the Fundamentals of Engineering (FE) Exam, which is the first step toward professional licensure. There are also opportunities for graduates to continue their education through our Accelerated Bachelor's/Master's program, our convenient Engineering Online graduate program, and with funded graduate research positions at NC State and other top universities. For more details, see the CCEE undergraduate programs brochure: ***go.ncsu.edu/ccee_ugp***.

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LEARN MORE

Applications - Prospective students are encouraged to submit applications in October for admission in the following fall: ***admissions.ncsu.edu***

Financial aid - Information concerning freshman scholarships and need-based financial aid can be found at ***financialaid.ncsu.edu***

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