



# Environmental Engineering

## AT RUTGERS

Are you interested in developing solutions to improving **air and water quality**? Or what about investigating safer ways to dispose of hazardous wastes or produce **renewable energy**? As an environmental engineer you will solve problems related to a wide variety of **environmental issues** by employing the principles of engineering along with **physical, chemical, and biological sciences**. Your efforts will largely encompass initiatives to improve human health, recycling and waste disposal, water and air pollution, and other issues plaguing today's natural and built environment.

The Environmental Engineering program at Rutgers will give you a broad and multi-disciplinary education in the fundamentals of environmental engineering as well as proactive learning opportunities to utilize classroom material in applications and design. A wide range of courses are offered to help you understand the impact of engineering solutions in a global, economic, environmental, and societal context.

Environmental engineers, having an integrated knowledge of environmental engineering and sciences can look forward to excellent career opportunities following graduation.

### PROFESSIONAL OPPORTUNITIES

- Air/water quality engineer
- Environmental consultant/engineer
- Energy conservation engineer
- Process engineer in industry
- Bioremediation engineer
- Green infrastructure engineer
- Hydraulic and hydrologic modeler
- Environmental specialist



### THE FUTURE IS NOW

Researchers in Prof. Nicole Fahrenfeld's lab are exploring if antibiotic-resistant bacteria can escape from sewers into waterways, causing a disease outbreak. The study examined the microbe-laden "biofilms" that cling to sewer walls, and even built a simulated sewer to study the germs that survive within.



For more information, visit  
[environmental.rutgers.edu](http://environmental.rutgers.edu)

*"People are finally starting to wake up and realize we don't have a Planet B, so there are many opportunities to make an impact."*

**Nicole Louca**

### DEGREES OFFERED AND CURRICULAR OPTIONS

BS

Options:

- Water Resources
- Environmental Unit Processes or Remediation
- Air Quality
- Sustainable Environmental Systems

BS/MS Five-year Dual Degree

MS



**RUTGERS**  
School of Engineering

Established in 1864, Rutgers University's School of Engineering is a vibrant academic community whose richly diverse students and faculty members are committed to globally sustainable engineering. Its mission is built on a commitment to fostering the integration of education and research to achieve transformational innovation that is ethically responsible. With seven academic departments representing key engineering disciplines, the School of Engineering is recognized around the world as comprehensive and leading-edge, training the next generation of innovators across a broad spectrum of professions.

# Environmental Engineering at Rutgers

## PROGRAM HIGHLIGHTS

The environmental engineering program prepares students to act as leaders in the community by applying environmental engineering solutions that have global and societal benefits and are consistent with the principles of sustainability.

Students take basic engineering courses and physical, chemical, and biological sciences in the first and second years. In the junior and senior years, the fundamentals are applied for multidisciplinary problem solving in various environmental fields.

At the completion of the program students will have the ability to:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specific needs related to public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Recognize ethical and professional responsibilities and make informed judgements.

## HANDS-ON ACTIVITIES

Students participate in organizations such as the Students for Environmental and Energy Development club, meet professionals in the field, and get involved in professional societies such as the American Water Works Association.

## COURSES OFFERED

**Environmental Engineering Fate and Transport**  
**Air Pollution Engineering**  
**Design in Solid Waste Treatment Systems**  
**Hydrology**  
**Environmental Engineering Design**

## RESEARCH FACILITIES AND CENTERS

**Urban and Coastal Water Systems Laboratory**  
**Air Sampling and Analysis Laboratory**  
**Environmental Engineering Laboratory**  
**Water Chemistry Research Laboratory**  
**Center for Urban and Environmental Sustainability (CUES)**  
**Soil Mechanics Research Laboratory**  
**Rutgers Energy Institute**

Environmental engineering students have many opportunities to design real solutions to today's problems through internships with the **New Jersey Water Resources Research Institute**, the **Rutgers Cooperative Extension Water Resources Program**, and the **Rutgers Energy Institute**.

While LED lighting can enhance plant growth in greenhouses, standards are needed to determine the optimal intensity and colors of light, according to Rutgers research under **Prof. A. J. Both**, that could help improve the **energy efficiency of horticultural lighting** products.



**Watch this Space** The Urban and Coastal Water System Laboratory, consisting of fluid mechanics lab and hydro-environmental informatics lab, is helping students address water resources engineering challenges through fundamental and applied research that takes advantage of our advanced lab, field, and computational facilities.