

ENVIRONMENTAL SCIENCE (MS)

Civil and Urban Engineering Department (<https://engineering.nyu.edu/academics/departments/civil-and-urban-engineering/>)

NYSED: 08860 HEGIS: 0922.00 CIP: 14.1401

Program Description

Environmental Science is a multidisciplinary profession that promotes sustainability by preserving, protecting and restoring environments. The MS in Environmental Science from the Tandon School of Engineering provides a strong foundation in the fundamental sciences as well as regulatory environment issues that govern human-natural environmental interactions. The MS in Environmental Science exposes our students to a combination of theory and practical problem-solving approaches that can be directly applied in the workforce or provide a strong foundation for advanced graduate studies.

Our program also offers a variety of research and scholarly activities, including natural and urban environmental systems management, food resilient cities, vulnerability mapping, urban water cycle/watershed studies, contamination remediation, climate change impacts on natural resources and anthropogenic interactions, and water and energy supply and demand chains.

Admissions

To apply for admission to any Tandon graduate program, please contact the Office of Graduate Admissions (<https://engineering.nyu.edu/admissions/graduate/>).

Desired Background

To be granted admission to the MS in Environmental Science degree, an applicant should hold a BS degree in a related science discipline from an accredited college in the United States or a recognized institution of higher learning abroad and has attained an undergraduate grade point average (GPA) of at least 3.0/4.0. Applicants holding BS degrees must demonstrate to have achieved the technical background necessary to pursue advanced work in Environmental Science. This background includes:

- Two semesters of college chemistry (with Laboratory)
- A semester of college calculus
- A semester of college statistics
- A semester of another science course
- A semester of water resources or hydrology
- A semester of environmental processes

Strong background in data analytics and problem-solving using computers is desired. International applicants should have completed these requirements prior to applying. For the domestic applicants however, the requirements of water resources and environmental processes courses, can be completed by taking the course below in the first offering of the course after enrollment for the MS degree.

- CE-UY 3223 Fundamentals of Environmental Engineering

Program Requirements

| Course | Title | Credits |
|---|--|-----------|
| Core Courses | | |
| CE-GY 7223 | Hydrology | 3 |
| CE-GY 7373 | Environmental Chemistry & Microbiology | 3 |
| CE-GY 7423 | Water & Wastewater Treatment | 3 |
| Approved Courses | | |
| Select 12 credits of approved courses from the list below. ¹ | | 12 |
| Electives | | |
| Select 9 credits of elective courses in consultation with the academic adviser. | | 9 |
| Total Credits | | 30 |

¹ Courses may also be taken from other programs at Tandon, including Environmental Engineering and Chemical Engineering. With the academic adviser's approval, students may choose courses from the Environmental Health Sciences program offered by the Grossman School of Medicine at NYU (<https://med.nyu.edu/departments-institutes/medicine/divisions/environmental-medicine/education/courses/>).

Approved Courses

| Course | Title | Credits |
|---|--|---------|
| CE-GY 6053 | Monitoring Cities | 3 |
| CE-GY 7233 | Groundwater Hydrology and Pollution | 3 |
| CE-GY 7353 | Selected Topics in Water Resources and Hydraulic Engineering I | 3 |
| CE-GY 7473 | Modeling Fate and Transport of Surface Water Pollution | 3 |
| CE-GY 7523 | Air Pollution | 3 |
| CE-GY 7573 | Detection and Control of Waterborne Pathogens | 3 |
| CE-GY 7653 | Wetland Design for Water Quality Improvement | 3 |
| CE-GY 7673 | Environmental Impact Assessment | 3 |
| CE-GY 7703 | Solid Waste Management | 3 |
| CE-GY 7713 | Selected Topics in Environmental and Water Resources Engineering | 3 |
| CE-GY 7723 | Selected Topics in Environmental and Water Resources Engineering I | 3 |
| CE-GY 7733 | Geomatics and GIS Application in Civil and Environmental Engineering | 3 |
| CE-GY 7753 | Environmental Systems Management | 3 |
| CE-GY 7913 | Climate Science: Realities & Risks of a Changing Climate | 3 |
| CE-GY 8283 | Risk Analysis | 3 |
| CE-GY 9963 | MS Project in Civil & Urban Engineering Department | 3 |
| CE-GY 997X | MS Thesis in Civil & Urban Engineering Dept | 6 |
| CUSP-GX 6023 | Introduction to Programming for Solving Urban Challenges | 3 |
| CUSP-GX 6033 | Urban Data Science | 3 |
| CUSP-GX 7013 | Introduction to Applied Data Science | 3 |
| CUSP-GX 7033 | Machine Learning for Cities | 3 |
| <i>Approved courses from the Graduate School of Arts and Science (GSAS)</i> | | |
| BIOL-GA 1004 | Environmental Health | 4 |

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|--------------|--|---|
| EHSC-GA 1005 | Ecotoxicology: Hudson River Case Study | 4 |
| EHSC-GA 1006 | Toxicology | 4 |
| EHSC-GA 1010 | Global Climate Change, Air Pollution, and Health | 4 |

Sample Plan of Study

| Course | Title | Credits |
|--------------------------|--|-----------|
| 1st Semester/Term | | |
| CE-GY 7373 | Environmental Chemistry & Microbiology | 3 |
| Approved Course 1 | | 3 |
| Approved Course 2 | | 3 |
| | Credits | 9 |
| 2nd Semester/Term | | |
| CE-GY 7223 | Hydrology | 3 |
| CE-GY 7423 | Water & Wastewater Treatment | 3 |
| Approved Course 3 | | 3 |
| | Credits | 9 |
| 3rd Semester/Term | | |
| Approved Course 4 | | 3 |
| Elective 1 | | 3 |
| Elective 2 | | 3 |
| | Credits | 9 |
| 4th Semester/Term | | |
| Elective 3 | | 3 |
| | Credits | 3 |
| | Total Credits | 30 |

Learning Outcomes

The primary goal of the MS in Environmental Science is to prepare professionals to:

1. fundamentally understand the science and applied engineering of natural and manmade environmental systems;
2. evaluate the interactions between man and the environment and control adverse impacts of pollution on ecological systems;
3. understand the monitoring and laboratory analysis of environmental systems; and
4. participate actively in a multidisciplinary team of professionals to solve environmental problems.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (<https://bulletins.nyu.edu/nyu/policies/>).

Tandon Policies

Additional academic policies can be found on the Tandon academic policy page (<https://bulletins.nyu.edu/graduate/engineering/academic-policies/>).