

ENVIRONMENTAL ENGINEERING (MS)

NYSED: 86475 HEGIS: 0922.00 CIP: 14.1401

Program Description

Environmental Engineering is a diverse field that focuses on the sustainable use and preservation of natural resources anthropogenic interactions in an increasingly urbanized world. It is a career field in high demand and it was recently ranked as the fifth most valuable college major (Forbes, May 2012). At the School of Engineering, our program has an urban environmental systems emphasis and it is unique in concentrating on many challenges that New York City and major cities of the world face.

The MS in Environmental Engineering prepares graduates to plan, functionally design, control, operate and manage municipal and industrial pollution-prevention systems. Students are exposed to a learning atmosphere that provides a mix of theory and practical problem-solving approaches. The flexible course options and student research projects offer a variety of opportunities. Areas of research and scholarly activities supported by some of the best faculty in NYC include environmental systems management, monitoring, sensing, and visualization, water security, flood risk management, conflict resolution, river water quality modeling, groundwater modeling, solid and hazardous waste management, contamination remediation, climate change studies, and development of decision support systems and GIS based applications.

Admissions

Admission to graduate programs in the Tandon School of Engineering requires the following minimum components:

- Résumé/CV
- Statement of Purpose
- Letters of Recommendation
- Transcripts
- Proficiency in English

The NYU Tandon Graduate Admissions website (<https://engineering.nyu.edu/admissions/graduate/apply/requirements/>) has additional information on school-wide admission.

Some programs may require additional components for admissions.

See the program's How to Apply (<https://engineering.nyu.edu/admissions/graduate/how-apply/>) for department-specific admission requirements and instructions.

Requirements

To be granted admission to the MS. in Environmental Engineering degree program at Tandon School of Engineering, an applicant should hold a B.S. degree in a related engineering discipline (e.g., environmental, civil, chemical, mechanical, etc.) 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. Students holding B.S. degrees in another engineering discipline, or a physical, chemical or biological science, may be admitted if they have achieved the technical background necessary to pursue advanced work in Environmental Engineering.

Recommended Educational Background

- Three semesters of calculus, ordinary differential equations
- A semester of college statistics
- A semester of calculus-based physics
- A semester of college chemistry
- A semester of fluid mechanics
- A semester of water resources engineering or hydrology
- Problem-solving work using computers
- Background in environmental process engineering

Students should have completed these requirements prior to applying. However, the requirements of fluid mechanics, water resources engineering or hydrology and exposure to environmental process engineering can be completed by taking the courses below in the first offering of the course after enrollment for the MS. degree.

- CE-UY 2213 FLUID MECHANICS AND HYDRAULICS
- CE-UY 3223 INTRO TO ENVIRONMENTAL ENGINEERING
- CE-UY 3243 WATER RESOURCES ENGINEERING

It is necessary to obtain a grade of "B" or better in each of these courses. None of the courses listed above may be used for graduate credit. Scores on the Graduate Record Examination (GRE) must be submitted for consideration.

Program Requirements

The program requires the completion of 30 credits, comprised of the following:

Course	Title	Credits
Core Courses		
CE-GY 7373	ENVIRONMENTAL CHEMISTRY & MICROBIOLOGY	3
CE-GY 7423	WATER & WASTEWATER TREATMENT	3
Select two of the following:		6
CE-GY 7223	HYDROLOGY	
CE-GY 7233	Groundwater Hydrology and Pollution	
CE-GY 7673	Environmental Impact Assessment	
CE-GY 7753	ENVIRONMENTAL SYSTEMS MANAGEMENT	
Major Requirements		
Select three (minimum) of the following:		9
CE-GY 7353	Selected Topics in Water Resources and Hydraulic Engineering I	
CE-GY 7363	SELECTED TOPICS IN WATER RESOURCES AND HYDRAULIC ENGINEERING II	
CE-GY 7473	Modeling Fate and Transport of Surface Water Pollution	
CE-GY 7523	AIR POLLUTION	
CE-GY 7573	DETECTION AND CONTROL OF WATERBORNE PATHOGENS	
CE-GY 7653	WETLAND DESIGN FOR WATER QUALITY IMPROVEMENT	
CE-GY 7703	Solid Waste Management	
CE-GY 7713	SELECTED TOPICS IN ENVIRONMENTAL AND WATER RESOURCES ENGINEERING	
CE-GY 7723	SELECTED TOPICS IN ENVIRONMENTAL AND WATER RESOURCES ENGINEERING I	

CE-GY 7733	Geomatics and GIS Application in Civil and Environmental Engineering
CE-GY 7913	Climate Science: Realities & Risks of a Changing Climate
CE-GY 8283	Risk Analysis
CE-GY 8493	Environmental Geotechnology

Electives

Select nine credits of approved engineering and science electives ¹ 9

Total Credits 30

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This may include up to 3 credits of CE-GY 9963 MS PROJECT IN CIVIL & URBAN ENGINEERING DEPARTMENT or up to 6 credits of CE-GY 997X MS THESIS in CIVIL & URBAN ENGINEERING DEPT.

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
CE-GY 7373	ENVIRONMENTAL CHEMISTRY & MICROBIOLOGY (Core Course 1)	3
CE-GY 7423	WATER & WASTEWATER TREATMENT (Core Course 2)	3
Core Course 3		3
Credits		9
2nd Semester/Term		
Core Course 4		3
Major Course 1		3
Major Course 2		3
Credits		9
3rd Semester/Term		
Major Course 3		3
Elective 1		3
Elective 2		3
Credits		9
4th Semester/Term		
Elective 3		3
Credits		3
Total Credits		30

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Fundamentally understand the science and engineering of natural and man-made environmental systems.
2. Functionally design air, water and waste treatment systems and components.
3. Control and operate environmental facilities.
4. Understand the modeling and simulation of environmental systems.
5. Participate actively in multidisciplinary teams 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/>).