

ENVIRONMENTAL ENGINEERING (BS)

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

NYSED: 44664 HEGIS: 0922.00 CIP: 14.1401

Program Description

The adverse effects of modern life on the natural environment have come into sharp focus in recent decades. Climate change and pollution of the atmosphere and ecosystems are existential threats that contemporary society must overcome if future generations are to inherit a thriving, habitable planet. All nations share this burden, and environmental engineers are at the vanguard of the scientific and technological initiatives that must come to pass as humankind strives to find a better, more harmonious balance with nature.

Environmental engineers apply chemical, physical, and biological principles to designing processes and systems for the protection of public health and safety. They design, construct, and manage landfills, drinking water treatment facilities, and wastewater reclamation facilities; assess the dangers of environmental contamination, including to the air we breathe, water we drink, and soil in which we grow our food; and consult with local, regional, and federal authorities to recommend process improvements to support sustainability and resiliency efforts.

At NYU Tandon, environmental engineering students explore topics that build upon the basic sciences, mathematics, and traditional engineering design concepts. The Bachelor of Science in Environmental Engineering offered by the Department of Civil and Urban Engineering will require 128 credits. It shares a common first-year curriculum with the BS Civil Engineering degree program and most other engineering BS programs at Tandon. Specialization in the major begins during sophomore year, concurrent with completion of most Tandon lower-division math and science courses.

Admissions

New York University's Office of Undergraduate Admissions supports the application process for all undergraduate programs at NYU. For additional information about undergraduate admissions, including application requirements, see How to Apply (<https://www.nyu.edu/admissions/undergraduate-admissions/how-to-apply.html>).

Program Requirements

Course	Title	Credits
Core Requirements		
EXPOS-UA 1	Writing as Inquiry	4
EXPOS-UA 22	Advanced Writing for Engineers	4
MA-UY 1024	Calculus I for Engineers	4
MA-UY 1124	Calculus II for Engineers	4
MA-UY 2034	Linear Algebra and Differential Equations	4
MA-UY 2224	Probability and Statistics for Engineers	4
CM-UY 1003	General Chemistry for Engineers	3
CM-UY 1001	General Chemistry for Engineers Laboratory	1
BMS-UY 1003	Introduction to Cell and Molecular Biology	3
PH-UY 1013	Mechanics	3

PH-UY 2023	Electricity, Magnetism, & Fluids	3
PH-UY 2033	Waves, Optics, & Thermodynamics	3
PH-UY 2121	General Physics Laboratory I	1
URB-UY 2334	Introduction of Environmental Sciences	4
or ENVST-UA 100	Environmental Systems Science	
URB-UY 3834	Special Topics in Sustainable Urban Environments	4
or ENVST-UA 101	Environment & Society	
Humanities and Social Science Electives (3 courses)		12
Major Requirements		
EG-UY 1004	Introduction to Engineering and Design	4
CS-UY 1113	Problem Solving and Programming I	3
CE-UY 1002	Introduction to Civil and Environmental Engineering	2
CE-UY 2112	Structural Statics	2
CE-UY 2213	Fluid Mechanics and Hydraulics	3
CE-UY 3223	Fundamentals of Environmental Engineering	3
CE-UY 2253	Environmental Chemistry	3
CE-UY 3013	Computing in Civil Engineering	3
CE-UY 3243	Water Resources Engineering	3
CE-UY 3263	Air Pollution Generation and Control	3
CE-UY 3233	Environmental Engineering Process Design	3
CE-UY 3273	Environmental Data Analysis	3
CE-UY 4092	Leadership, Business Principles, Policy and Ethics in Civil Engineering	2
CE-UY 4221		1
CE-GY 5213		3
CE-UY 4863	Environmental Engineering Capstone	3
CE-GY 5223	Waste Management and Resource Recovery	3
CE-GY 5233	Sustainable Systems Engineering	3
Major Electives		
Select two (2) Environmental or Civil Engineering Electives		6
Other Electives		
Select four (4) free elective courses		12
Total Credits		129

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
EXPOS-UA 1	Writing as Inquiry	4
MA-UY 1024	Calculus I for Engineers	4
CM-UY 1003	General Chemistry for Engineers	3
CM-UY 1001	General Chemistry for Engineers Laboratory	1
EG-UY 1004	Introduction to Engineering and Design	4
Credits		16
2nd Semester/Term		
EXPOS-UA 2		4
MA-UY 1124	Calculus II for Engineers	4
PH-UY 1013	Mechanics	3
CS-UY 1113	Problem Solving and Programming I	3
CE-UY 1002	Introduction to Civil and Environmental Engineering	2
Credits		16
3rd Semester/Term		
MA-UY 2034	Linear Algebra and Differential Equations	4

2 Environmental Engineering (BS)

PH-UY 2023	Electricity, Magnetism, & Fluids	3
PH-UY 2121	General Physics Laboratory I	1
BMS-UY 1003	Introduction to Cell and Molecular Biology	3
URB-UY 2334 or ENVSTUA 100	Introduction of Environmental Sciences or Environmental Systems Science	4
CE-UY 2112	Structural Statics	2
Credits		17
4th Semester/Term		
MA-UY 2224	Probability and Statistics for Engineers	4
PH-UY 2033	Waves, Optics, & Thermodynamics	3
CE-UY 2213	Fluid Mechanics and Hydraulics	3
CE-UY 3223	Fundamentals of Environmental Engineering	3
URB-UY 3834 or ENVSTUA 101	Special Topics in Sustainable Urban Environments or Environment & Society	4
Credits		17
5th Semester/Term		
CE-UY 2253	Environmental Chemistry	3
CE-UY 3013	Computing in Civil Engineering	3
CE-UY 3243	Water Resources Engineering	3
CE-UY 3263	Air Pollution Generation and Control	3
Humanities and Social Science Elective		4
Credits		16
6th Semester/Term		
CE-UY 3233	Environmental Engineering Process Design	3
CE-UY 3273	Environmental Data Analysis	3
Environmental Engineering Elective		3
Humanities and Social Science Elective		4
Free Elective		3
Credits		16
7th Semester/Term		
CE-UY 4092	Leadership, Business Principles, Policy and Ethics in Civil Engineering	2
CE-UY 4221		1
CE-GY 5213		3
CE-GY 5223	Waste Management and Resource Recovery	3
Humanities and Social Science Elective		4
Free Elective		3
Credits		16
8th Semester/Term		
CE-UY 4863	Environmental Engineering Capstone	3
CE-GY 5233	Sustainable Systems Engineering	3
Environmental Engineering Elective		3
Free Elective		3
Free Elective		3
Credits		15
Total Credits		129

- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

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/undergraduate/engineering/academic-policies/>).

Learning Outcomes

Upon successful completion of the program, graduates will be able to:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.