

Environmental Engineering

The BS in Environmental Engineering provides students with a rigorous foundation in the principles and practices needed to protect and improve environmental quality in natural and built systems. As population growth, industrial activity, and emerging contaminants continue to place pressure on air, water, and soil resources, this program prepares graduates to address these challenges through innovative and sustainable engineering solutions. Building upon NJIT's strong tradition of hands-on, real-world education, the curriculum integrates mathematics, chemistry, physics, earth and biological sciences, and core engineering concepts with specialized coursework in water and wastewater treatment, environmental microbiology, remediation, sustainability, policy, and environmental systems analysis.

Designed to meet ABET requirements and aligned with regional and national workforce needs, the program emphasizes both technical proficiency and an understanding of the societal, regulatory, and ethical context of environmental decision-making. Students gain practical skills through modern laboratory experiences, field-focused coursework, and a culminating two-semester senior design sequence that addresses real environmental problems. With its interdisciplinary structure, opportunities for BS/MS pathways, and strong connections to industry and government agencies, the BS in Environmental Engineering prepares graduates for immediate entry into professional practice, licensure pathways, or advanced study in engineering, science, law, or business, equipping them to contribute meaningfully to public health, environmental stewardship, and resilient infrastructure.

First Year

1st Semester		Credits
CHEM 125	General Chemistry I	3
CHEM 125A	General Chemistry Lab I	1
FED 101	Fundamentals of Engineering Design	2
ENGL 101	English Composition: Introduction to Academic Writing	3
MATH 111	Calculus I	4
CS 101	Computer Programming and Problem Solving	3
FYS SEM	First-Year Student Seminar	0
Term Credits		16

2nd Semester

CHEM 126	General Chemistry II	3
CHEM 126A	Gen Chemistry Lab II	1
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 112	Calculus II	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
ENE 101	Computer-Aided Design (CAD) for Environmental Engineering	1
Term Credits		16

Second Year

1st Semester

CHEM 243	Organic Chemistry I	3
ENE 260	Microbiology for Environmental Engineers	2
MATH 211	Calculus III A	3
MATH 333	Probability and Statistics	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
Term Credits		15

2nd Semester

ENE 262	Introduction to Environmental Engineering	3
CE 321	Water Resources Engineering	2
MATH 322	Differential Equations for Applications	3
CHEM 360	Environmental Chemistry of Air Pollution and Climate Change	3
MECH 235	Statics	3
Term Credits		14

Third Year

1st Semester

CE 342	Geology	3
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ENE 370	Environmental Policy and Ethics	3
History and Humanities GER 200 level (https://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
CE 320	Fluid Mechanics	3
ENE 330	Soil, Water and Air Quality Lab	1
ENE 331	Environmental Systems Lab	1
Term Credits		14
2nd Semester		
ENE 371	Remedial Systems Design	3
Technical Elective		3
History and Humanities GER 300+ level (https://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
ENE 361	Solid and Hazardous Waste Engineering	3
ENE 360	Water and Waste Water Engineering	3
Term Credits		15
Fourth Year		
1st Semester		
ENE 430	Environmental Fate and Management	3
ENE 494	Environmental Engineering Design I	3
ENE 445	Ecology and Wetlands	3
Select one of these (Sustainability Elective)		3
ENE 454	Parametric Design of Sustainable Water Treatment Plants	
ENE 465	Green and Sustainable Environmental Engineering	
COM 300 level Select One Of these:		3
COM 339	Practical Journalism	
COM 312	Effective Communication	
COM 319	Technical, Professional and Scientific Writing for Publication	
COM 337	Photojournalism	
COM 316	Creative Writing	
COM 313	Writing in the Workplace	
Term Credits		15
2nd Semester		
ENE 495	Environmental Engineering Design II	3
ENE 450	Environmental Impact Analysis	3
Humanities and Social Science Senior Seminar GER (https://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
IE 492	Engineering Management	3
Technical Elective		3
Term Credits		15
Total Credits		120