

ENVIRONMENTAL ENGINEERING (MAJOR)

This program was founded by the Department of Civil and Environmental Engineering and Earth Sciences to provide students with a quantitative preparation for professional careers or continued higher education regarding the assessment and remediation of human impact on our environment. It is a unique program that prepares students to look at all aspects of water and environmental problems from a range of perspectives including the Earth system, water movement (hydrology, fluid flow), environmental chemistry, geochemistry, and reactive transport. The Environmental Engineering degree program will prepare students to understand the necessary foundational chemistry, fluid flow and mixing mechanics, all within the context of the Earth system.

The environmental engineering program combines classroom, laboratory and field studies. Students are encouraged to participate in a semester study abroad, such as the Australia program (during the fall semester, junior year), which provides additional opportunity for field-based studies. All students are encouraged to conduct independent research under faculty supervision during their junior and senior years. The environmental engineering program will culminate with major design experience in the senior year. Student teams will work closely with industry professionals and faculty who act as consultants on a real-world design projects to facilitate the student's understanding of the design process.

The professional aspects of civil and environmental engineering are emphasized and promoted by the activities of a student chapter of the American Society of Civil Engineers, in which all students of the department are eligible and encouraged to participate. In addition, a junior class field trip examines major infrastructure projects and environmental systems including tall buildings, bridges, stadiums, transportation systems, navigations systems, flood protection works, clean water supply, and wastewater systems. The field trip is offered in both the fall and spring.

Environmental Engineering students will be ready to work as environmental engineers remediating the environment on local and global scales with opportunities available in engineering consulting firms, government agencies, national laboratories, and industries requiring monitoring and advancement of remediation technologies. Additionally, the environmental engineering degree will prepare students for graduate study in Environmental Engineering programs.

Further details about the environmental engineering program may be found on the web at cees.nd.edu.

The following courses are applicable to students entering the College in 2026.

Course	Title	Hours
First Year		
First Semester		
WR 13100	Writing and Rhetoric	3
MATH 10550	Calculus I	4
CHEM 10171 & CHEM 11171	Introduction to Chemical Principles and Introduction to Chemical Principles Laboratory	4
EG 10117	Engineering Design	3
MOR 10101	Moreau First-Year Seminar	1
Hours		15
Second Semester		
University Seminar		3
MATH 10560	Calculus II	4
PHYS 10310	Engineering Physics I: Mechanics	4
EG 10118	Engineering Computing	3

First Year Technical Elective		3
Hours		17
Sophomore Year		
First Semester		
CE 20110 & CE 21110	Planet Earth and Planet Earth Laboratory	4
CE 30300	Introduction to Environmental Engineering	3
MATH 20550	Calculus III	3.5
CE 20150	Statics	3
Core Curriculum course ¹		3
Hours		16.5
Second Semester		
CE 20300	Global Change, Water and Energy	3
CE 20320	Environmental Aquatic Chemistry	3
MATH 20580	Introduction to Linear Algebra and Differential Equations	3.5
ACMS 30440	Probability and Statistics	3
Core Curriculum course ¹		3
Hours		15.5
Junior Year		
First Semester		
CE 30125	Computational Methods	3
Environmental Earth Science elective		3
CE 20520 or CE 30500 or CE 30530 or CE 30560 or CE 31540	Environmental Mineralogy or Geomorphology for Engineers and Scientists or Sedimentology and Stratigraphy or Dynamic Earth and Natural Disasters or Petrology/Earth Materials Lab	3
CE 30460	Fluid Mechanics	3
CE 40350	Environmental Microbiology	3
CE 30339	Laboratory and Field Methods for Environmental Engineering	3
Hours		18
Second Semester		
CE 30320	Physical-Chemical Water Treatment Processes	3
CE 30455	Environmental Hydrology	3
CE 40450	Hydraulics	3
Core Curriculum course ¹		3
CE 40341	Biological Process Design	3
CE 30338	Design Tools for Environmental Engineers	1
Hours		16
Senior Year		
First Semester		
CE 40300	Geochemistry	3
CE 40460	Groundwater Hydrology	3
CE 40701	Principles of Practice	1
Core Curriculum course ¹		3
Core Curriculum course ¹		3
EG Elective		3
Hours		16
Second Semester		
CE 40420	Air Quality and Reactive Transport	3
CE 40702	Senior Design	3
EG Elective ²		3
CEEES Elective		3
Core Curriculum course ¹		3
Moreau Senior Capstone		1
Hours		16
Total Hours		130

¹ See "University Core Curriculum" on the first page of the College of Engineering section.

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² All electives are defined in the Academic Guide for the Department of Civil and Environmental Engineering & Earth Sciences, available on the department web site.

Certain graduate courses are open to advanced undergraduates with permission of the department chair.