Environmental Engineering

Department Information

- **Department Web Site:**
  www.ndsu.edu/ccee/ (http://www.ndsu.edu/ccee/)
- **Credential Offered:**
  B.S.Env.E.
- **Sample Program Guide:**
  catalog.ndsu.edu/programs-study/undergraduate/environmental-engineering/#planofstudytext (http://catalog.ndsu.edu/programs-study/undergraduate/environmental-engineering/#planofstudytext)

Major Requirements

Major: Environmental Engineering

Degree Type: B.S.Env.E.
Minimum Credits Required for Degree: 131

University Degree Requirements

1. Satisfactory completion of all requirements of the curriculum in which one is enrolled.
2. Earn a minimum total of 120 credits in approved coursework. Some academic programs exceed this minimum.
3. Satisfactory completion of the general education requirements as specified by the university.
4. A minimum institutional GPA of 2.00 based on work taken at NDSU.
5. At least 30 credits must be NDSU resident credits. Resident credits include credits registered and paid for at NDSU.
6. At least 36 credits presented for graduation must be in courses numbered 300 or higher.
7. Students presenting transfer credit must meet the NDSU residence credits and the minimum upper level credit. Of the 30 credits earned in residence, a minimum of 15 semester credits must be in courses numbered 300 or above, and 15 semester credits must be in the student's curricula for their declared major.

For complete information, please refer to the Degree and Graduation Requirements (http://catalog.ndsu.edu/past-bulletin-archive/2024-25/academic-policies/undergraduate-policies/degree-and-graduation/) section of this Bulletin.

University General Education Requirements

A list of university approved general education courses and administrative policies are available here (http://catalog.ndsu.edu/past-bulletin-archive/2024-25/academic-policies/undergraduate-policies/general-education/#genedcoursestext).

Code	Title	Credits
Category C: Communication		**12**
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing †		
Category R: Quantitative Reasoning †		**3**
Category S: Science and Technology †		**10**
Category A: Humanities and Fine Arts †		**6**
Category B: Social and Behavioral Sciences †		**6**
Category W: Wellness †		**2**
Category D: Cultural Diversity *†		
Category G: Global Perspectives *†		
Total Credits		**39**

*
Courses for category D & G are satisfied by completing D & G designated courses in another general education category.

†
General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review major requirements to determine if specific courses can also satisfy these general education categories.

Code	Title	Credits
Environmental Engineering Core Requirements		
CE 212	Civil Engineering Graphic Communications	3
CE 309	Fluid Mechanics	3
CE 310	Fluid Mechanics Laboratory	1
CE 316	Soil Mechanics	3
CE 408	Water Resources and Supply	3
CE 410	Water and Wastewater Engineering	3
CE 472	Solid and Hazardous Waste Management	3
CE 477	Applied Hydrology	3
ENVE 111	Introduction to Environmental Engineering	1
ENVE 112	Analysis and Design Methods for Environmental Engineers	1
ENVE 240	Microbiological Principles for Environmental Engineers	3
ENVE 250	Fundamentals of Environmental Engineering	3
ENVE 360	Environmental Chemistry for Water and Wastewater	3
ENVE 370	Sustainability Engineering	3
ENVE 412	Unit Operations and Processes	2
ENVE 450	Environmental Engineering Chemistry Laboratory	1
ENVE 460	Environmental Fate and Transport	3
ENVE 473	Air Pollution	3
ENVE 488	Senior Design I	2
ENVE 489	Senior Design II	2
MATH 128	Introduction to Linear Algebra [3]	1
MATH 165	Calculus I [3]	4
MATH 166	Calculus II [3]	4
MATH 259	Multivariate Calculus [3]	3
MATH 266	Introduction to Differential Equations [3]	3
CHEM 121	General Chemistry I	3
CHEM 121L	General Chemistry I Laboratory	1
CHEM 122	General Chemistry II	3
CHEM 122L	General Chemistry II Laboratory	1
CHEM 240	Survey of Organic Chemistry	3
ENGL 321	Writing in the Technical Professions	3
ENGR 327	Ethics, Engineering, and Technology	3
GEOL 105	Physical Geology	3
IME 440	Engineering Economy	3
IME 460	Evaluation of Engineering Data	3
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3
ME 223	Mechanics of Materials	3
PHYS 252	University Physics II	4
Technical Electives		
Students must take a total of 9 credits - a minimum of 6 credits from category one and a maximum of 3 credits from category two.		
Category One Technical Electives		6
CE 417	Slope Stability and Retaining Walls	
CE 421	Open Channel Flow	
CE 462	Designing with Geosynthetics	
CE 471	Environmental Nanotechnology	
CE 474	Groundwater Sustainability Design	

CE 476	Watershed Modeling	
CE 478	Water Quality Management	
CE 479	Advanced Water and Wastewater Treatment (Advanced Water and Wastewater Treatment)	
CE 491	Seminar (Small Community Water Supply and Sanitation)	
CE 494	Individual Study (Environmental Engineering Design)	
ENVE 468	Plastics Pollution to Solution	
Category Two Technical Electives		3
BIOL 470	Freshwater Ecology and Limnology [1]	
BIOL 480	Ecotoxicology [1]	
BIOL 481	Wetland Science [1]	
CE 486	Nanotechnology and Nanomaterials	
GEOG 455	Introduction to Geographic Information Systems	
GEOG 456	Advanced Geographic Information Systems [1]	
GEOG 465	Remote Sensing of the Environment	
RNG 452	Managing Natural and Rangeland Resources using GIS	
or NRM 452	Managing Natural and Rangeland Resources using GIS	
RNG 454	Wetland Resources Management [1/2]	
or NRM 454	Wetland Resources Management	
Total Credits		**112**

1

This course has a pre-requisite that may need to be satisfied.

2

This course requires the approval of the offering department prior to enrolling.

3

No grades less than a "C" are accepted in any of the math courses for this curriculum.