

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/2023-24/academic-policies/undergraduate-policies/degree-and-graduation/>) section of this Bulletin.

University General Education Requirements

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

*

May be satisfied by completing 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.

- A list of university approved general education courses and administrative policies are available here (<http://catalog.ndsu.edu/past-bulletin-archive/2023-24/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

| 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 * | 1 |
| MATH 165 | Calculus I * | 4 |
| MATH 166 | Calculus II * | 4 |
| MATH 259 | Multivariate Calculus * | 3 |
| MATH 266 | Introduction to Differential Equations * | 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 | 2 |
| 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 | |

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|----------------------------------|---|---|
| CE 478 | Water Quality Management | |
| CE 479 | 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**111**

*

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

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.