CIVIL ENGINEERING DEGREE

Students must also complete the Undergraduate Registration Requirement ([https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement](https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement)) and the degree requirements of their home school.

### Requirements (48 units)

#### Core courses (32 units)

<table>
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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>4 mathematics courses (<a href="https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext">https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext</a>)</td>
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<tr>
<td>4 engineering analysis and computer proficiency courses (<a href="https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext">https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext</a>)</td>
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| 4 units of basic science.²  
PHYSICS 135-2 General Physics  
CHEM 131-0 General Chemistry 1  
or CHEM 151-0 Accelerated General Chemistry 1  
or CHEM 171-0 Advanced General Inorganic Chemistry |
| 1 unit in biological sciences, or  
CIV_ENV 203-0 Earth in the Anthropocene  
or EARTH 201-0 Earth Systems Revealed  
or EARTH 202-0 Earth’s Interior |
| 1 additional unit in biological sciences, chemistry, or physics, or  
EARTH 201-0 Earth Systems Revealed  
or EARTH 202-0 Earth’s Interior  
or CIV_ENV 203-0 Earth in the Anthropocene |
| 3 design and communications courses ([https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)) |
| 5 basic engineering courses:  
CIV_ENV 216-0 Mechanics of Materials I  
MECH_ENG 241-0 Fluid Mechanics I  
MECH_ENG 222-0 Thermodynamics & Statistical Mechanics - I  
or BMD_ENG 250-0 Thermodynamics  
or CHEM_ENG 211-0 Thermodynamics  
CIV_ENV 306-0 Uncertainty Analysis  
CIV_ENV 304-0 Civil and Environmental Engineering Systems Analysis |
| 7 social sciences/humanities courses ([https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)) |
| 5 unrestricted electives ([https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)) |

1 unit of unrestricted electives is from Chemistry lab, PHYSICS 136-2, and CIV_ENV 301-1

1 See general requirements ([https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)) for details.

2 PHYSICS 140-2 Fundamentals of Physics for PHYSICS 135-2  
General Physics. Associated lab is PHYSICS 136-3 General Physics Laboratory.

#### 4 Focus Areas

- Environmental  
- Geotechnics  
- Management  
- Transportation

1 Capstone Design  
CIV_ENV 382-1 Capstone Design I  
CIV_ENV 382-2 Capstone Design II

#### 5 Technical Electives

- Professional Development
CIV_ENV 301-1 Professional Development Seminar I

1 At least 12 out of the 16 units in the major program must be CIV_ENV courses with 100% engineering topic; only GEN_ENG 220-1 Analy/Comp Graph and GEN_ENG 220-2 Analy/Comp Graph II may be taken P/N.

2 Must select from an approved list available in Undergraduate CIV_ENV Handbook; must choose at least 2 design courses from 2 focus areas.

3 Design is defined as courses taught by licensed Professional Engineer or equivalent as defined by ABET and use appropriate codes and/or standards.

4 300 level or higher in mathematics, science, engineering, or another area supporting the area of specialization; GEN_ENG 220-1 Analy/Comp Graph and GEN_ENG 220-2 Analy/Comp Graph II may count toward this requirement; only 1 unit of CIV_ENV 399-0 Projects may be counted; no 399 from another department is accepted. Choose from an approved list available in Undergraduate CIV_ENV Handbook.

5 0.34 units may count towards unrestricted electives.

#### Major Program (16 units)

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| 2 Basic Courses: choose 2 from below  
CIV_ENV 220-0 Structural Art |

CIV_ENV 201-0 Engineering Possibilities: Decision Science in the Age of Smart Technologies  
CIV_ENV 202-0 Biological and Ecological Principles  
CIV_ENV 221-0 Theory of Structures I  
CIV_ENV 250-0 Earth Surface Engineering  
CIV_ENV 260-0 Environmental Systems and Processes  
CIV_ENV 371-0 Introduction to Transportation Planning and Analysis  
or CIV_ENV 376-0 Transportation System Operations

1 At least 12 out of the 16 units in the major program must be CIV_ENV courses with 100% engineering topic; only GEN_ENG 220-1 Analy/Comp Graph and GEN_ENG 220-2 Analy/Comp Graph II may be taken P/N.

2 Must select from an approved list available in Undergraduate CIV_ENV Handbook; must choose at least 2 design courses from 2 focus areas.

3 Design is defined as courses taught by licensed Professional Engineer or equivalent as defined by ABET and use appropriate codes and/or standards.

4 300 level or higher in mathematics, science, engineering, or another area supporting the area of specialization; GEN_ENG 220-1 Analy/Comp Graph and GEN_ENG 220-2 Analy/Comp Graph II may count toward this requirement; only 1 unit of CIV_ENV 399-0 Projects may be counted; no 399 from another department is accepted. Choose from an approved list available in Undergraduate CIV_ENV Handbook.

5 0.34 units may count towards unrestricted electives.