Construction Engineering

Department Information

- **Department Location:** Engineering Bldg 106
- **Department Phone:** 701-231-6202
- **Department Web Site:** www.ndsu.edu/construction/
- **Credential Offered:** B.S.Cons.E.
- **Plan Of Study Sample:** bulletin.ndsu.edu/programs-study/undergraduate/construction-engineering/#planofstudytext

Major Requirements

**Major: Construction Engineering**

Degree Type: B.S.Cons.E.

Minimum Degree Credits to Graduate: 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 36 credits presented for graduation must be in courses numbered 300 or higher.
6. Transfer Students: Must earn a minimum of 60 credits from a baccalaureate-degree granting or professional institution.
   a. Of these 60, at least 36 must be NDSU resident credits as defined in #7.
   b. Within the 36 resident credits, a minimum of 15 must be in courses numbered 300 or higher and 15 credits in the major field of study.
7. At least 36 credits must be NDSU resident credits. Resident credits include credits registered and paid for at NDSU.

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

University General Education Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
<td>12</td>
</tr>
<tr>
<td>ENGL 120</td>
<td>College Composition II</td>
<td></td>
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<tr>
<td>COMM 110</td>
<td>Fundamentals of Public Speaking</td>
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</tbody>
</table>

Upper Division Writing †

Quantitative Reasoning (R) †

Science and Technology (S) †

Humanities and Fine Arts (A) †

Social and Behavioral Sciences (B) †

Wellness (W) †

Cultural Diversity (D) †

Global Perspectives (G) †

Total Credits

* 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://bulletin.ndsu.edu/academic-policies/undergraduate-policies/general-education/#genedcoursestext).

## Major Requirements

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<tr>
<th>Code</th>
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<th>Credits</th>
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<tr>
<td><strong>Construction Engineering Core Requirements</strong></td>
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<tr>
<td>CM&amp;E 111</td>
<td>Introduction to Construction Management and Engineering</td>
<td>1</td>
</tr>
<tr>
<td>CM&amp;E 200</td>
<td>Construction Documents and Codes</td>
<td>3</td>
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<tr>
<td>CM&amp;E 204</td>
<td>Construction Surveying</td>
<td>3</td>
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<tr>
<td>CM&amp;E 212</td>
<td>Construction Graphic Communications</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 240</td>
<td>Financial Cost Concepts for Construction Managers</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 301</td>
<td>Construction Technology and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 305</td>
<td>Pre-Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 315</td>
<td>Specifications and Contracts</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 380</td>
<td>Construction Estimating: Quantities and Costs</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 403</td>
<td>Scheduling and Project Control</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 405</td>
<td>Construction Support Operations</td>
<td>3</td>
</tr>
<tr>
<td>CM&amp;E 489</td>
<td>Construction Design Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

**CE Courses:**
- CE 303: Civil Engineering Materials (3 credits)
- CE 303L: Civil Engineering Materials Laboratory (3 credits)
- CE 309: Fluid Mechanics (3 credits)
- CE 316: Soil Mechanics (3 credits)
- CE 343: Structural Engineering and Analysis (4 credits)

**CE 400 Level Courses:** Select 12 credits from the following:
- CM&E 465: Bridge Engineering and Management (3 credits)
- CM&E 475: Design of Site Erosion Control (3 credits)
- CE 404: Reinforced Concrete (3 credits)
- CE 408: Water Resources and Supply (3 credits)
- CE 411: Design of Pre-stressed Concrete (3 credits)
- CE 417: Slope Stability and Retaining Walls (3 credits)
- CE 419: Pavement Design (3 credits)
- CE 421: Open Channel Flow (3 credits)
- CE 430: Timber and Form Design (3 credits)
- CE 441: Finite Element Analysis (3 credits)
- CE 444: Structural Steel Design (3 credits)
- CE 461: Foundation Engineering (3 credits)
- CE 462: Designing with Geosynthetics (3 credits)
- CE 478: Water Quality Management (3 credits)

**ME Courses Required:**
- ME 221: Engineering Mechanics I (3 credits)
- ME 222: Engineering Mechanics II (3 credits)
- ME 223: Mechanics of Materials (3 credits)

**Math Courses Required:**
- MATH 128: Introduction to Linear Algebra (3 credits)
- MATH 165: Calculus I (May satisfy general education category R) (4 credits)
- MATH 166: Calculus II (4 credits)
- MATH 259: Multivariate Calculus (3 credits)
- MATH 266: Introduction to Differential Equations (3 credits)

**Additional Courses:**
- BUSN 431: Business Law I-Contracts, Property and Torts (3 credits)
- CHEM 121: General Chemistry I (4 credits)
  & 121L: General Chemistry I Laboratory (May satisfy general education category S) (4 credits)
CHEM 122  General Chemistry II (May satisfy general education category S)  3
ENGR 402  Engineering Ethics and Social Responsibility  1
ENGL 320  Business and Professional Writing (May satisfy general education category C)  3
or ENGL 321  Writing in the Technical Professions
GEOL 105  Physical Geology (May satisfy general education category S)  3
or GEOL 106  The Earth Through Time
PHYS 252  University Physics II (May satisfy general education category S)  4
STAT 330  Introductory Statistics (May satisfy general education category R)  3
Select one from the following (May satisfy general education category B & G):  3 or 6
ECON 105  Elements of Economics
ECON 201  Principles of Microeconomics
& ECON 202  and Principles of Macroeconomics

Total Credits  110-113

Degree Requirements and Notes

• A student must complete at least 60 semester credits of professional level course work in his/her program while in residence and enrolled in the college. Students transferring into the college from programs with professional accreditation are exempt from this residency requirement but are subject to the residency requirement of NDSU.
• A minimum 2.50 cumulative GPA is required for transfer students to be admitted to the B.S. in construction engineering program.
• To satisfy the Gen Ed Category B requirements, a student can choose between two options: ECON 105 plus an additional course within Category B OR ECON 201 and ECON 202. Both options satisfy the Gen Ed Category G requirement.