# Civil Engineering, BSCV

## Requirements for Students Matriculating in or before Academic Year 2023-2024

Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

**Minimum Overall Grade Point Average:** 2.00

**Total Hours:** 128

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>General Education Requirements</strong></td>
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<tr>
<td></td>
<td>All General Education coursework requirements are satisfied upon completion of this degree plan</td>
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<tr>
<td></td>
<td><strong>English Composition</strong></td>
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<td>See Academic Regulation 3.5 (<a href="http://catalog.okstate.edu/university-academic-regulations/#english-composition">http://catalog.okstate.edu/university-academic-regulations/#english-composition</a>)</td>
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<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
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<tr>
<td></td>
<td>or ENGL 1313</td>
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<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
<td>3</td>
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<tr>
<td></td>
<td>or ENGL 1213</td>
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<tr>
<td></td>
<td>or ENGL 1413</td>
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<tr>
<td></td>
<td><strong>American History &amp; Government</strong></td>
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<td>Select one of the following:</td>
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<tr>
<td>HIST 1103</td>
<td>Survey of American History</td>
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<tr>
<td>HIST 1483</td>
<td>American History to 1865 (H)</td>
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<tr>
<td>HIST 1493</td>
<td>American History Since 1865 (DH)</td>
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<tr>
<td>POLS 1113</td>
<td>American Government</td>
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<tr>
<td></td>
<td><strong>Analytical &amp; Quantitative Thought (A)</strong></td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
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<td>MATH 2153</td>
<td>Calculus II (A)</td>
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<td><strong>Humanities (H)</strong></td>
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<td>Courses designated (H)</td>
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<td><strong>Natural Sciences (N)</strong></td>
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<td>Must include one Laboratory Science (L) course.</td>
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<tr>
<td>CHEM 1414</td>
<td>General Chemistry for Engineers (LN) ¹</td>
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<tr>
<td>or CHEM 1314</td>
<td>Chemistry I (LN)</td>
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<tr>
<td>BIOL 1114</td>
<td>Introductory Biology (LN)</td>
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<td>or BIOL 1113</td>
<td>Introductory Biology (N)</td>
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<tr>
<td>&amp; BIOL 1111</td>
<td>and Introductory Biology Laboratory (LN)</td>
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<td>or GEOL 1114</td>
<td>Physical Geology (LN)</td>
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<td>PHYS 2014</td>
<td>University Physics I (LN)</td>
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<td><strong>Social &amp; Behavioral Sciences (S)</strong></td>
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<td>SPCH 2713</td>
<td>Introduction to Speech Communication (S)</td>
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<td><strong>Diversity (D) &amp; International Dimension (I)</strong></td>
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<td>May be completed in any part of the degree plan.</td>
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<td>Select at least one Diversity (D) course.</td>
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<td>Select at least one International Dimension (I) course.</td>
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<td><strong>College/Departmental Requirements</strong></td>
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<td><strong>Basic Science</strong></td>
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<tr>
<td>PHYS 2114</td>
<td>University Physics II (LN)</td>
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<td>&amp; CIVE 2081</td>
<td>and Environmental Chemistry for Engineers ¹</td>
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<td>or CHEM 1515</td>
<td>Chemistry II (LN)</td>
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<td><strong>Mathematics</strong></td>
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<td>MATH 2163</td>
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<tr>
<td>ENGR 1111</td>
<td>Introduction to Engineering</td>
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<td>ENGR 1322</td>
<td>Engineering Design with CAD</td>
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<td>ENGR 1412</td>
<td>Introductory Engineering Computer Programming</td>
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<td><strong>Engineering Science</strong></td>
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<td>ENSC 2113</td>
<td>Statics</td>
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<td>ENSC 2123</td>
<td>Elementary Dynamics</td>
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<td>ENSC 2143</td>
<td>Strength of Materials</td>
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<td>ENSC 2141</td>
<td>Strength of Materials Lab</td>
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<td></td>
<td><strong>Civil Engineering</strong></td>
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<tr>
<td>CIVE 2041</td>
<td>Civil and Environmental Engineering Seminar</td>
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<td>CIVE 3614</td>
<td>Engineering Surveying</td>
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<td>CIVE 3813</td>
<td>Environmental Engineering Science</td>
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<td>MATH 2233</td>
<td>Differential Equations</td>
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<td>or STAT 4073</td>
<td>Engineering Statistics</td>
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<td>or STAT 4033</td>
<td>Engineering Statistics with Design of Experiments</td>
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<td><strong>Engineering Science</strong></td>
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<td>ENSC 3233</td>
<td>Fluid Mechanics</td>
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<td>ENSC 3231</td>
<td>Fluids and Hydraulics Lab</td>
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<td><strong>Civil Engineering</strong></td>
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<tr>
<td>CIVE 3413</td>
<td>Structural Analysis</td>
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<td>CIVE 3513</td>
<td>Structural Steel Design</td>
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<td>CIVE 3523</td>
<td>Reinforced Concrete Design</td>
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<td>CIVE 3623</td>
<td>Engineering Materials Laboratory</td>
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<td>CIVE 3633</td>
<td>Transportation Engineering</td>
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<td>CIVE 3714</td>
<td>Introduction to Geotechnical Engineering</td>
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<td>CIVE 3833</td>
<td>Applied Hydraulics</td>
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<td>CIVE 3843</td>
<td>Hydrology I</td>
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<td>CIVE 4041</td>
<td>Engineering Practice</td>
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<tr>
<td>CIVE 4043</td>
<td>Senior Design</td>
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<tr>
<td>CIVE 4273</td>
<td>Construction Engineering and Project Management</td>
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<td>CIVE 4833</td>
<td>Unit Operations in Environmental Engineering</td>
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<td><strong>Industrial Engineering &amp; Management</strong></td>
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<tr>
<td>IEM 3503</td>
<td>Engineering Economic Analysis</td>
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<td><strong>Electives</strong></td>
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<td>Select 9 hours of the following:</td>
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<tr>
<td>CIVE 4010</td>
<td>Civil Engineering Research</td>
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<tr>
<td>CIVE 4013</td>
<td>Aquatic Chemistry</td>
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¹ At least one course must be completed with a grade of A or better.
CIVE 4033  GIS Applications for Water Resources
CIVE 4050  Special Topics in Civil & Environmental Engineering
CIVE 4103  Construction Simulation
CIVE 4113  Construction Business Management
CIVE 4123  The Legal & Regulatory Environment of Civil Engineering
CIVE 4133  Construction Contracts and Specifications
CIVE 4153  Contract Administration
CIVE 4163  Construction Equipment Management
CIVE 4183  Construction Estimating
CIVE 4193  BIM for Construction
CIVE 4243  Use and Design of Geosynthetics
CIVE 4283  Numerical Methods in Geotechnical Engineering
CIVE 4293  Design and Analysis of Earth Retaining Structures
CIVE 4303  Systems Analysis for Civil Engineers
CIVE 4313  Highway Traffic Operations
CIVE 4323  Civil Infrastructure Systems
CIVE 4343  Urban Transportation Planning
CIVE 4363  Design and Planning of Airports
CIVE 4373  Design of Traffic Control Systems
CIVE 4383  Geometric Design of Highways
CIVE 4403  Advanced Strength of Materials
CIVE 4413  Classical and Matrix Methods of Structural Analysis
CIVE 4513  Advanced Reinforced Concrete Design
CIVE 4523  Advanced Steel Structure Design
CIVE 4533  Prestressed Concrete
CIVE 4563  Structural Dynamics
CIVE 4573  Timber Design
CIVE 4653  Asphalt Materials and Mix Design
CIVE 4673  Concrete Materials and Mix Design
CIVE 4693  Pavement Design and Analysis
CIVE 4723  Foundation Engineering
CIVE 4733  Soil Mechanics
CIVE 4773  Soil-Structure Interaction
CIVE 4743  Project Engineering and Management
CIVE 4753  Engineering Soil Stabilization
CIVE 4873  Air Pollution Control Engineering
CIVE 4863  Advanced Unit Operations in Environmental Engineering
CIVE 4913  Groundwater Hydrology
CIVE 4923  Environ Risk Assessment
CIVE 4933  Water Treatment
CIVE 4943  Risk and Failure Analysis of Dams
CIVE 4983  Residues & Solid Waste Management
CIVE 4963  Open Channel Flow
CIVE 4973  Concrete Durability

ENGR 4043 or ENGR 4060 may be used as one of the CIVE electives.

<table>
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<th>Hours Subtotal</th>
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<td>Total Hours</td>
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Chem 1515 fulfills the requirements for both CHEM 1414 and CIVE 2081.

Other Requirements

Graduation Requirements

1. A minimum 2.00 Technical GPA. The technical GPA is calculated from all courses counting in the curriculum with a prefix belonging to the degree program, or substitutions for these courses.
2. If “B” or higher is not earned in ENGL 1113 Composition I, then ENGL 1213 Composition II must be completed.
3. A "C" or better is required in all CIVE, ENSC, and Math prefixed courses required in the degree.
4. The major engineering design experience, capstone course, is satisfied by CIVE 4043 Senior Design.

Additional State/OSU Requirements

• At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
• Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
• Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
• Degrees that follow this plan must be completed by the end of Summer 2029.