2015-2016 ISU Civil Engineering Flow Chart (Environmental)—130 CR

**Semester 1**
16 CR

- ENGR 101 Engineering Orientation F.S. – R CR
- C E 160 Engineering Problem Solving F.S. – 3 CR
- MATH 165 Calculus I F.S. – 3 CR
- CHEM 177 General Chemistry I F.S. – 4 CR
- LIB 160 Library Instruction F.S. – R CR

**Semester 2**
18 CR

- C E 105 Intro to Civil Engr. Profession F. – 3 CR
- C E 170 Graphics for Civil Engineering F. – 2 CR
- MATH 166 Calculus II F.S. – 4 CR
- PHYS 221 Introduction to Classical Physics I F.S. – 5 CR
- C E 111 Fundamentals of Surveying I F. – 3 CR

**Semester 3**
16 CR

- GEOL 201 Geology for Engineers F. – 3 CR
- MATH 266 Elem. Differential Equations F.S. – 3 CR
- E M 274 Statics of Engineering F.S. – 3 CR
- CHEM 178 General Chemistry II F.S. – 3 CR
- CHEM 178L Laboratory in Gen. Chemistry II F. – 1 CR

**Semester 4**
18 CR

- SP CM 212 Fundamentals of Public Speaking F.S. – 3 CR
- C E 325 Prob. Solving F. – 3 CR
- E M 327 Mechanics of Fluids F.S. – 3 CR
- C E 306 Econ. Analysis & Prof. Issues in CE F.S. – 3 CR
- CHEM 231 Essential Laboratory in Organic Chemistry F.S. – 1 CR

**Semester 5**
16 CR

- C E 332 Structural Analysis I F. – 3 CR
- C E 326 Environmental Engineering F. – 3 CR
- E M 378 Mechanics of Materials Lab F.S. – 1 CR
- BIOL 173 Principles of Biology I F. – 3 CR

**Semester 6**
18 CR

- C E 420 Environmental Eng. Chemistry F. – 3 CR
- C E 355 Transportation Engineering F. – 3 CR
- C E 360 Geotechnical Engineering F. – 3 CR
- C E 372 Hydrology & Hydraulics F. – 3 CR
- MICRO 201 Introduction to Microbiology F. – 2 CR

**Semester 7**
12 CR

- C E 403 Program Assessment F. – R CR
- C E 428 Treatment Plant Design F. – 3 CR
- C E 485 Civil Engineering Design F. – 3 CR
- MATH 265 Calculus III F.S. – 4 CR
- MICRO 201 Introduction to Microbiology F. – 2 CR

**Semester 8**
12 CR

- ENGL 250 Written, Oral, Vis. & Elect. Comp. F.S. – 3 CR
- GEOL 201 Geology for Engineers F. – 3 CR
- MATH 266 Elem. Differential Equations F.S. – 3 CR
- CHEM 178L Laboratory in Gen. Chemistry II F. – 1 CR
- BIOL 211 Principles of Biology I F. – 3 CR

**Notes:**
1. Although this flowchart is provided for your guidance, the University Catalog contains the definitive list of requirements.
2. Only co-requisites are shown. They may be taken at the same time, but are directional indicated by the arrow.
**Prerequisites are listed on the back.** Prerequisites will be met if taken in the example order suggested on this sheet. See [http://catalog.iastate.edu/azcourses/](http://catalog.iastate.edu/azcourses/) for full list of classes.
<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 173 (or)</td>
<td>None</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>High school biology</td>
</tr>
<tr>
<td>C E 105</td>
<td>None</td>
</tr>
<tr>
<td>C E 111</td>
<td><em>C E 160, credit or enrollment in ENGR 170 or C E 170, MATH 165, credit or enrollment in C E 105 for C E majors</em></td>
</tr>
<tr>
<td>C E 160</td>
<td>Satisfactory scores on mathematics placement assessments; credit or enrollment in MATH 165</td>
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<tr>
<td>C E 170</td>
<td>MATH 165, credit or enrollment in C E 105</td>
</tr>
<tr>
<td>C E 206</td>
<td>MATH 166, ENGL 250; C E 105; ECON 101 recommended</td>
</tr>
<tr>
<td>C E 306</td>
<td><em>C E 206, Credit or enrollment in a technical communication elective from approved department list</em></td>
</tr>
<tr>
<td>C E 326</td>
<td>CHEM 177 or CHEM 178, MATH 166, credit or enrollment in E M 378</td>
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<tr>
<td>C E 332</td>
<td>E M 324</td>
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<tr>
<td>C E 334</td>
<td>C E 332, E M 327</td>
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<tr>
<td>C E 355</td>
<td><em>C E 111, C E 206, PHYS 221, a course in statistics from the approved departmental list</em></td>
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<tr>
<td>C E 360</td>
<td>E M 324, credit or enrollment in GEOL 201</td>
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<tr>
<td>C E 372</td>
<td>E M 378, a course in statistics from the approved departmental list</td>
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<tr>
<td>C E 382</td>
<td>Credit or enrollment in C E 360</td>
</tr>
<tr>
<td>C E 403</td>
<td>Verification of undergraduate application for graduation by the end of the first week of class.</td>
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<tr>
<td>C E 420</td>
<td>C E 326, CHEM 177 and CHEM 178, MATH 166</td>
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<tr>
<td>C E 421</td>
<td>C E 326</td>
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<tr>
<td>C E 428</td>
<td>C E 326</td>
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<tr>
<td>C E 460</td>
<td>C E 360</td>
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<tr>
<td>C E 485</td>
<td>C E 306, C E 326, C E 333 or C E 334, C E 355, C E 360, C E 372, C E 382, SP CM 212. Course enrollment limited to final graduating semester.</td>
</tr>
<tr>
<td>CHEM 177</td>
<td>MATH 140 or high school equivalent, and CHEM 50 or 1 year high school chemistry, and credit or enrollment in CHEM 177L</td>
</tr>
</tbody>
</table>

**Prerequisites vary for the following electives. Please consult the various lists corresponding to the desired elective.**

- Design Elective
- International Perspectives and US Diversity Electives
- Social Science and Humanities Electives
- Statistics Elective
- Technical Communication Elective