# 2018 - 2019 Major Map

**Construction Engineering, BSE**

**School/College:** Ira A. Fulton Schools of Engineering  
**Location:** Tempe campus  
**ESCONBSE**

## Term 1 - 16 Credit Hours Critical course signified by 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ) | 4
| FSE 100: Introduction to Engineering | 2 | C |
| MAT 265: Calculus for Engineers I (MA) | 3 | C |
| ASU 101-CON: The ASU Experience | 1 |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C |
| Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C) | 3 |
| Minimum 2.00 GPA ASU Cumulative. | |

**Term hours subtotal:** 16

## Term 2 - 16 Credit Hours Critical course signified by 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 242: Elementary Linear Algebra</td>
<td>2</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 266: Calculus for Engineers II (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY 121: University Physics I: Mechanics (SQ)</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY 122: University Physics Laboratory I (SQ)</td>
<td>1</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CON 101: Construction and Culture: a Built Environment (HU &amp; H)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete ENG 101 OR ENG 105 OR ENG 107 course(s).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum 2.00 GPA ASU Cumulative.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

## Term 3 - 47 Credit Hours Critical course signified by 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 210: Engineering Mechanics I: Statics</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 267: Calculus for Engineers III (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 275: Modern Differential Equations (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY 131: University Physics II: Electricity and Magnetism (SQ)</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY 132: University Physics Laboratory II (SQ)</td>
<td>1</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Prep for success using the Sophomore Guide.**  
**Consult the Resume, Presentation, and Resource Library for tips on how to create a technical resume, job shadow, do informational interviews and mentor with alumni.**
Minimum 2.00 GPA ASU Cumulative.

Complete Mathematics (MA) requirement.

### Term 4 47 - 62 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 212: Engineering Mechanics II: Dynamics</td>
<td>3</td>
<td>C</td>
<td>Pursue an undergraduate research experience.</td>
</tr>
<tr>
<td>CNE 213: Introduction to Deformable Solids</td>
<td>3</td>
<td>C</td>
<td>Apply for internships.</td>
</tr>
<tr>
<td>CNE 243: Heavy Construction Equipment, Methods and Materials</td>
<td>3</td>
<td></td>
<td>Attend career fairs and events.</td>
</tr>
<tr>
<td>BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG) OR BME 111: Engineering Perspectives on Biological Systems</td>
<td>3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR GLG 101: Introduction to Geology I (Physical) (SQ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNE 271: Construction Safety</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 16

### Term 5 62 - 77 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 321: Structural Analysis and Design</td>
<td>4</td>
<td></td>
<td>If students take MAE 241 they will need to make up 1 credit hour in a Civil, Construction, math or science course.</td>
</tr>
<tr>
<td>EEE 202: Circuits I OR MAE 241: Introduction to Thermodynamics</td>
<td>4-3</td>
<td></td>
<td>Network at student organization competitions or professional societies.</td>
</tr>
<tr>
<td>IEE 380: Probability and Statistics for Engineering Problem Solving (CS)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 15-16

### Term 6 77 - 91 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 383: Construction Estimating</td>
<td>4</td>
<td></td>
<td>Research and prepare for graduate school</td>
</tr>
<tr>
<td>CNE 241: Surveying</td>
<td>3</td>
<td></td>
<td>Apply for an engineering 4+1 program.</td>
</tr>
<tr>
<td>CNE 351: Geotechnical Engineering</td>
<td>4</td>
<td></td>
<td>Develop a professional profile online.</td>
</tr>
<tr>
<td>CNE 400: Earth Systems Engineering and Management ((L or HU) &amp; H)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 14

### Summer 6 91 - 92 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 484: Internship</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 1

### Term 7 92 - 107 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 453: Construction Technology</td>
<td>3</td>
<td></td>
<td>Design Elective requirements: Complete a total of 2 design electives.</td>
</tr>
<tr>
<td>CNE 495: Construction Planning and Scheduling (CS)</td>
<td>3</td>
<td></td>
<td>Plan for success using the Senior Guide.</td>
</tr>
<tr>
<td>Upper Division Design Elective</td>
<td>3</td>
<td></td>
<td>Use Handshake to apply for full-time positions.</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td></td>
<td>Complete an in-person or virtual practice interview.</td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 15

### Term 8 107 - 120 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 453: Construction Planning and Scheduling (CS)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Design Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNE 495: Construction Planning and Scheduling (CS)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Design Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 15
<table>
<thead>
<tr>
<th>Design Elective</th>
<th>Technical Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 420: Steel Structures</td>
<td>CEE 372: Transportation Engineering</td>
</tr>
<tr>
<td>CEE 421: Concrete Structures</td>
<td>CEE 412: Pavement Analysis and Design</td>
</tr>
<tr>
<td>CEE 452: Foundations</td>
<td>CEE 420: Steel Structures</td>
</tr>
<tr>
<td>CEE 421: Concrete Structures</td>
<td>CEE 421: Concrete Structures</td>
</tr>
<tr>
<td>CEE 423: Structural Design</td>
<td>CEE 423: Structural Design</td>
</tr>
<tr>
<td>CEE 432: Developing Software for Engineering Applications</td>
<td></td>
</tr>
<tr>
<td>CEE 440: Hydrology</td>
<td>CEE 441: Water Resources Engineering</td>
</tr>
<tr>
<td>CEE 442: Foundations</td>
<td>CEE 452: Foundations</td>
</tr>
<tr>
<td>CEE 462: Unit Operations in Environmental Engineering</td>
<td></td>
</tr>
<tr>
<td>CEE 466: Urban Water System Design</td>
<td>CEE 467: Environmental Microbiology</td>
</tr>
<tr>
<td>CEE 467: Environmental Microbiology</td>
<td>CEE 474: Transportation Systems Planning</td>
</tr>
<tr>
<td>CEE 475: Highway Geometric Design</td>
<td>CEE 481: Civil Engineering Project Management</td>
</tr>
<tr>
<td>CEE 483: Highway Materials, Construction, and Quality</td>
<td></td>
</tr>
<tr>
<td>CEE 493: Honors Thesis (L)</td>
<td>CEE 494: Concrete Canoe Design</td>
</tr>
<tr>
<td>CEE 494: Concrete Canoe Design</td>
<td>CEE 494: Steel Bridge Design</td>
</tr>
<tr>
<td>CON 296: Summer Field Internship</td>
<td>CON 306: Testing of Materials for Construction</td>
</tr>
<tr>
<td>CON 345: Mechanical Systems</td>
<td>CON 448: Sustainable Construction</td>
</tr>
<tr>
<td>CON 454: Trenchless Construction Methods</td>
<td></td>
</tr>
<tr>
<td>CON 493: Honors Thesis (L)</td>
<td></td>
</tr>
</tbody>
</table>

- Design Elective requirements: Complete a total of 2 design electives.
General Studies designations listed on the major map are current for the 2018 - 2019 academic year.

General Studies Awareness Requirements:
- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2018 - 2019 academic year.