# 2023 - 2024 Major Map
## Construction Engineering, BSE

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

<table>
<thead>
<tr>
<th>Term 1 0 - 16 Credit Hours</th>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSE 100: Introduction to Engineering</td>
<td></td>
<td>2</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 265: Calculus for Engineers I (MA)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ASU 101-CON: The ASU Experience</td>
<td></td>
<td>1</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></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA ASU Cumulative.

Term hours subtotal: 16

<table>
<thead>
<tr>
<th>Term 2 16 - 31 Credit Hours</th>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 242: Elementary Linear Algebra</td>
<td></td>
<td>2</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 266: Calculus for Engineers II (MA)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 121: University Physics I: Mechanics (SQ)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 122: University Physics Laboratory I (SQ)</td>
<td></td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CON 101: Construction and Culture: a Built Environment (HU &amp; H)</td>
<td></td>
<td>3</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></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA ASU Cumulative.

Term hours subtotal: 15

<table>
<thead>
<tr>
<th>Term 3 31 - 47 Credit Hours</th>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNE 210: Engineering Mechanics I: Statics</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CNE 243: Heavy Construction Equipment, Methods and Materials</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 267: Calculus for Engineers III (MA)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 275: Modern Differential Equations (MA)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 131: University Physics II: Electricity and Magnetism (SQ)</td>
<td></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 132: University Physics Laboratory II (SQ)</td>
<td></td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

• Prep for success using the Sophomore Guide.

---

ASU 101 or college-specific equivalent  
First-Year Seminar required of all first-year students

• If ENG 105 is taken, a 3 credit hour applicable elective must also be taken prior to graduation. See advisor.

• Prep for success using the First-Year Student Guide.

• Join a Fulton community.

• Explore engineering and technical professions.

• Create a Handshake profile.

• Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
Minimum 2.00 GPA ASU Cumulative.

Complete Mathematics (MA) requirement.

Term hours subtotal: 16

**Term 4 47 - 62 Credit Hours** Critical course signified by  

<table>
<thead>
<tr>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

**Term 4 47 - 62 Credit Hours** Critical course signified by  

- CNE 212: Engineering Mechanics II: Dynamics
- CNE 213: Introduction to Deformable Solids
- BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG) OR BME 111: Engineering Perspectives on Biological Systems OR GLG 101: Introduction to Geology I (Physical) (SQ)
- CNE 271: Construction Safety
- ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)

- Pursue an undergraduate research experience.
- Apply for internships.
- Attend career fairs and events.

**Term 5 63 - 78 Credit Hours** Necessary course signified by  

- CNE 321: Structural Analysis and Design
- CNE 353: Civil Engineering Materials
- EEE 202: Circuits I OR MAE 241: Introduction to Thermodynamics
- IEE 380: Probability and Statistics for Engineering Problem Solving (CS)

- If students take MAE 241 they will need to make up 1 credit hour in a Civil, Construction, math or science course.
- Plan for success using the Junior Guide Network at student organization competitions or professional societies.

**Term 6 78 - 91 Credit Hours** Necessary course signified by  

- CNE 241: Surveying
- CNE 351: Geotechnical Engineering
- CNE 400: Earth Systems Engineering and Management ((L or HU) & H)
- CNE 453: Construction Technology
- CNE 495: Construction Planning and Scheduling (CS)
- Upper Division Design Elective
- Upper Division Technical Elective
- Humanities, Arts and Design (HU) AND Global Awareness (G) AND Historical Awareness (H) course(s).

- Research and prepare for graduate school.
- Apply for an engineering 4+1 program.
- Develop a professional profile online.

**Summer 4 62 - 63 Credit Hours**  

- CNE 296: Summer Field Internship

- Pursue an undergraduate research experience.
- Apply for internships.
- Attend career fairs and events.

**Summer 6 91 - 92 Credit Hours**  

- CNE 484: Internship

- Pursue an undergraduate research experience.
- Apply for internships.
- Attend career fairs and events.

**Term 7 92 - 107 Credit Hours** Necessary course signified by  

- CNE 453: Construction Technology
- CNE 495: Construction Planning and Scheduling (CS)
- Upper Division Design Elective
- Humanities, Arts and Design (HU) AND Global Awareness (G)

- Design Elective requirements: complete a total of 2 design electives.
- Plan for success using the Senior Guide.
- Use Handshake to apply for full-time positions.
## 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>CEE 420: Steel Structures</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 421: Concrete Structures</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 452: Foundations</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE 422: Pavement Analysis and Design</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNE 486: Integrated Civil Engineering Design (L)</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNE 455: Construction Project Management</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNE 496: Construction Contract Administration (L)</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>Term hours subtotal:</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Design Elective

- CEE 420: Steel Structures
- CEE 421: Concrete Structures
- CEE 452: Foundations

### Technical Elective

- CEE 372: Transportation Engineering
- CEE 412: Pavement Analysis and Design
- CEE 420: Steel Structures
- CEE 421: Concrete Structures
- CEE 432: Developing Software for Engineering Applications
- CEE 440: Hydrology
- CEE 441: Water Resources Engineering
- CEE 452: Foundations
- CEE 462: Unit Operations in Environmental Engineering
- CEE 466: Urban Water System Design
- CEE 467: Environmental Microbiology
- CEE 474: Transportation Systems Planning
- CEE 475: Highway Geometric Design
- CEE 481: Civil Engineering Project Management
- CEE 483: Highway Materials, Construction, and Quality
- CEE 493: Honors Thesis (L)
- CEE 494: Concrete Canoe Design
- CEE 494: Steel Bridge Design
- CON 296: Summer Field Internship
- CON 310: Testing of Materials for Construction
- CON 345: Mechanical Systems
- CON 448: Sustainable Construction
- CON 454: Trenchless Construction Methods
- CON 493: Honors Thesis (L)
- FSE 301: Entrepreneurship and Value Creation

- Design Elective requirements: complete a total of 2 design electives.
Notes:

- First-Year Composition: All students are placed in ENG 101 unless submission of SAT, ACT, Accuplacer, IELTS, or TOEFL score, or college-level transfer credit or test credit equivalent to ASU's first-year composition course(s), determine otherwise. Students on Polytechnic, Downtown Phoenix and West Campuses are encouraged to complete the Directed Self-Placement survey to choose the first-year composition option they believe best suits their needs. Visit: https://cisa.asu.edu/DSP
- Mathematics Placement Assessment score determines placement in first mathematics course.

Total Hours: 120  
Upper Division Hours: 45 minimum  
Major GPA: 2.00 minimum  
Cumulative GPA: 2.00 minimum  
Total hrs at ASU: 30 minimum  
Hrs Resident Credit for Academic Recognition: 56 minimum  
Total Community College Hrs: 64 maximum

General University Requirements Legend

General Studies Core Requirements:
- Literacy and Critical Inquiry (L)  
- Mathematical Studies (MA)  
- Computer/Statistics/Quantitative Applications (CS)  
- Humanities, Arts and Design (HU)  
- Social-Behavioral Sciences (SB)  
- Natural Science - Quantitative (SQ)  
- Natural Science - General (SG)

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

First-Year Composition

General Studies designations listed next to courses on the major map were valid for the 2023 - 2024 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.