




















# 2022 - 2023 Major Map



## Civil Engineering, BSE

School/College: Ira A. Fulton Schools of Engineering  
ESCEEBSE


Term 1 0 - 16 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 FSE 100: Introduction to Engineering	2	C	<ul style="list-style-type: none"> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students and should be completed the first semester.</li> <li>If ENG 105 is taken, a 3 hour applicable elective must also be taken prior to graduation. See advisor.</li> <li>Prep for success using the <a href="#">First-Year Student Guide</a>.</li> <li>Join a <a href="#">Fulton community</a>.</li> <li>Explore engineering and technical professions.</li> </ul>
 MAT 265: Calculus for Engineers I (MA)	3	C	
ASU 101-CEE: The ASU Experience	1		
CHM 114: General Chemistry for Engineers (SQ) OR CHM 116: General Chemistry II (SQ)	4		
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	
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:		16	
Term 2 16 - 31 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 MAT 242: Elementary Linear Algebra	2	C	<ul style="list-style-type: none"> <li>Create a <a href="#">Handshake</a> profile.</li> <li>Get involved with EPICS, the Generator Labs, and the <a href="#">Fulton Start-Up Center</a>.</li> </ul>
 MAT 266: Calculus for Engineers II (MA)	3	C	
 PHY 121: University Physics I: Mechanics (SQ)	3	C	
 PHY 122: University Physics Laboratory I (SQ)	1	C	
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	
Humanities, Arts and Design (HU)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:		15	
Term 3 31 - 47 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CEE 210: Engineering Mechanics I: Statics	3	C	<ul style="list-style-type: none"> <li>Prep for success using the <a href="#">Sophomore Guide</a>.</li> </ul>
 MAT 267: Calculus for Engineers III (MA)	3	C	


	MAT 275: Modern Differential Equations (MA)	3	C
	PHY 131: University Physics II: Electricity and Magnetism (SQ)	3	C
	PHY 132: University Physics Laboratory II (SQ)	1	C
	ECN 211: Macroeconomic Principles (SB) OR ECN 212: Microeconomic Principles (SB)	3	
	Minimum 2.00 GPA ASU Cumulative.		
	Complete Mathematics (MA) requirement.		
Term hours subtotal:		16	

Term 4 47 - 62 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
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	CEE 212: Engineering Mechanics II: Dynamics	3	C
	CEE 213: Introduction to Deformable Solids	3	C
	BIO 181: General Biology I (SQ) OR BIO 182: General Biology II (SG) OR CHM 231: Elementary Organic Chemistry (SQ) OR GLG 101: Introduction to Geology I (Physical) (SQ)	3-4	
	IEE 380: Probability and Statistics for Engineering Problem Solving (CS)	3	
	MAE 241: Introduction to Thermodynamics	3	
Term hours subtotal:		15-16	



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

Term 5 62 - 77 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
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	CEE 321: Structural Analysis and Design	4	
	CEE 351: Geotechnical Engineering	4	
	CEE 353: Civil Engineering Materials	4	
	CEE 384: Numerical Methods for Engineers (CS)	3	
Term hours subtotal:		15	

- Plan for success using the **Junior Guide**.
- Network at **student organization competitions** or professional societies.

Term 6 77 - 92 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
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	CEE 300: Engineering Business Practice (L)	3	
	CEE 361: Introduction to Environmental Engineering	4	
	CEE 341: Fluid Mechanics for Civil Engineers	4	
	CEE 372: Transportation Engineering	3	
	BIO OR CEE OR CHM OR GLG OR MAE OR MAT OR MEE OR EGR Elective	1	

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



Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).

Term hours subtotal: 15

Term 7 92 - 107 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
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CEE 400: Earth Systems Engineering and Management ((L or HU) & H)

3

Upper Division Design Elective

3

Complete 3 courses:  
Technical Elective

9

Term hours subtotal: 15

- Technical Elective and Design Elective requirements: See advisor for guidance in selection.
- Plan for success using the [Senior Guide](#).
- Use [Handshake](#) to apply for full-time positions.
- Complete an in-person or virtual [practice interview](#).

Term 8 107 - 120 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
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CEE 486: Integrated Civil Engineering Design (L)

4

Upper Division Design Elective

3

Technical Elective

3

Social-Behavioral Sciences (SB) AND Global Awareness (G)

3

Term hours subtotal: 13

- Technical Elective and Design Elective requirements: See advisor for guidance in selection.

Hide Course List(s)/Track Group(s)

Technical Elective	Design Elective
CEE 281: Surveying	CEE 412: Pavement Analysis and Design
CEE 412: Pavement Analysis and Design	CEE 420: Steel Structures
CEE 420: Steel Structures	CEE 421: Concrete Structures
CEE 423: Structural Design	CEE 441: Water Resources Engineering
CEE 421: Concrete Structures	CEE 452: Foundations
CEE 440: Hydrology	CEE 462: Unit Operations in Environmental Engineering
CEE 441: Water Resources Engineering	CEE 466: Urban Water System Design
CEE 452: Foundations	CEE 475: Highway Geometric Design
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: Earth Structures

CHE 469: Air Quality Engineering

CON 453: Construction Technology

FSE 301: Entrepreneurship and Value  
Creation

IEE 431: Engineering Administration (L)

## 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 2022 - 2023 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.