






















## 2022 - 2023 Major Map

### Software Engineering, BS

School/College: [Ira A. Fulton Schools of Engineering](#)  
TSSERBS

Some accelerated combinations are not available to ASU Online students. Interested students should contact their academic advisor for more information.

Term 1 - A 0 - 6 Credit Hours	Hours	Minimum Grade	Notes
ASU 101-FSE: The ASU Experience	1		<ul style="list-style-type: none"> <li>If ENG 105 is taken, a three credit hour elective course must also be taken prior to graduation.</li> <li>ASU 101 is only required of new first-year students transferring in fewer than 24 hours to ASU.</li> </ul>
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	
FSE 100: Introduction to Engineering	2	C	
Term hours subtotal:	6		
Term 1 - B 6 - 12 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CSE 110: Principles of Programming (CS)	3	C	<ul style="list-style-type: none"> <li>View ASU Online first-year student registration information <a href="#">here</a>.</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 <a href="#">engineering and technical professions</a>.</li> </ul>
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	
Term hours subtotal:	6		
Term 2 - A 12 - 18 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CSE 205: Object-Oriented Programming and Data Structures (CS)	3	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 265: Calculus for Engineers I (MA)	3	C	
Term hours subtotal:	6		
Term 2 - B 18 - 24 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 SER 232: Computer Systems Fundamentals (CS)	3	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	
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	6		
Term 3 - A 24 - 30 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 243: Discrete Mathematical Structures	3	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>
CSE 230: Computer Organization and Assembly Language Programming	3	C	
Term hours subtotal:	6		
	Hours	Minimum Grade	

Term 3 - B 30 - 36 Credit Hours	Hours	Grade	Notes
CSE 240: Introduction to Programming Languages	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) OR MAT 275: Modern Differential Equations (MA)	3	C	
Complete Mathematics (MA) requirement.			
Term hours subtotal:	6		
Term 4 - A 36 - 42 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 SER 222: Design and Analysis of Data Structures and Algorithms	3	C	
EGR 104: Critical Inquiry in Engineering (L)	3	C	
Term hours subtotal:	6		
Term 4 - B 42 - 48 Credit Hours	Hours	Minimum Grade	Notes
EGR 280: Engineering Statistics (CS)	3	C	<ul style="list-style-type: none"> <li>• Pursue an <a href="#">undergraduate research</a> experience.</li> <li>• Apply for <a href="#">internships</a>.</li> <li>• Attend <a href="#">career fairs and events</a>.</li> </ul>
SER 216: Software Enterprise: Personal Process and Quality	3	C	
Term hours subtotal:	6		
Term 5 - A 48 - 54 Credit Hours	Hours	Minimum Grade	Notes
MAT 343: Applied Linear Algebra	3	C	
SER 315: Software Enterprise: Design and Process	3	C	
Term hours subtotal:	6		
Term 5 - B 54 - 61 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 SER 334: Operating Systems and System Programming	3	C	<ul style="list-style-type: none"> <li>• Plan for success using the <a href="#">Junior Guide</a>.</li> <li>• Network at <a href="#">student organization</a> competitions or professional societies.</li> </ul>
PHY 121: University Physics I: Mechanics (SQ)	3	C	
PHY 122: University Physics Laboratory I (SQ)	1	C	
Term hours subtotal:	7		
Term 6 - A 61 - 67 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 SER 321: Principles of Distributed Software Systems	3	C	<ul style="list-style-type: none"> <li>• During the junior year of the program, students should contact an academic advisor to identify course options.</li> </ul>
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Term hours subtotal:	6		
Term 6 - B 67 - 73 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 SER 316: Software Enterprise: Construction and Transition	3	C	<ul style="list-style-type: none"> <li>• Research and prepare for <a href="#">graduate school</a>.</li> <li>• Develop a <a href="#">professional profile online</a>.</li> </ul>
SER 335: Engineering Secure Software Systems	3	C	
 Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).			
Term hours subtotal:	6		
Term 7 - A 73 - 79 Credit Hours <b>Necessary course signified by</b> 	Hours	Minimum Grade	Notes
 SER 415: Software Enterprise: Inception and Elaboration (L)	3	C	
SER 322: Principles of Database Management	3	C	
Term hours subtotal:	6		
Term 7 - B 79 - 86 Credit Hours	Hours	Minimum Grade	Notes

Lab Science Sequence AND Natural Science - General (SG) OR Natural Science - Quantitative (SQ)	4	
SER 4** Elective	3	C
Term hours subtotal:	7	

- During the junior year of the program, students should contact an academic advisor to identify course options/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 - A 86 - 93 Credit Hours <a href="#">Necessary course signified by</a> ★	Hours	Minimum Grade	Notes
★ SER 416: Software Enterprise: Project and Process Management	3	C	
Lab Science Sequence AND Natural Science - General (SG) OR Natural Science - Quantitative (SQ)	4		
Term hours subtotal:	7		

Term 8 - B 93 - 99 Credit Hours	Hours	Minimum Grade	Notes
Complete 2 courses: SER 4** Elective	6	C	
Term hours subtotal:	6		

- During the junior year of the program, students should contact an academic advisor to identify course options/selection.

Term 9 - A 99 - 105 Credit Hours <a href="#">Necessary course signified by</a> ★	Hours	Minimum Grade	Notes
★ SER 401: Computing Capstone Project I	3	C	
Social-Behavioral Sciences (SB)	3		
Term hours subtotal:	6		

Term 9 - B 105 - 114 Credit Hours	Hours	Minimum Grade	Notes
Technical Elective	3	C	
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB) ( HST 318 recommended)	3		
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
Term hours subtotal:	9		

Term 10 - A 114 - 120 Credit Hours <a href="#">Necessary course signified by</a> ★	Hours	Minimum Grade	Notes
★ SER 402: Computing Capstone Project II	3	C	
Humanities, Arts and Design (HU) AND Historical Awareness (H)	3		
Term hours subtotal:	6		

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

Lab Science Sequence	Technical Elective
BIO 181: General Biology I (SQ) AND BIO 182: General Biology II (SG)	CPI Upper Division Elective
BIO 201: Human Anatomy and Physiology I (SG) AND BIO 202: Human Anatomy and Physiology II (SG)	CSE Upper Division Elective
	EEE Upper Division Elective
	FSE 301: Entrepreneurship and Value Creation

CHM 113: General Chemistry I (SQ) AND  
CHM 116: General Chemistry II (SQ)

FSE 404: EPICS Gold: EPICS in Action

GLG 101: Introduction to Geology I  
(Physical) (SQ) AND GLG 103: Introduction  
to Geology I: Laboratory (SQ)

IEE Upper Division Elective

IFT Upper Division Elective

GLG 102: Introduction to Geology II  
(Historical) (SG & H) AND GLG 104:  
Introduction to Geology II-Laboratory (SG)

MAE Upper Division Elective

SER Upper Division Elective

GLG 110: Dangerous World (SQ & G) AND  
GLG 111: Dangerous World Laboratory  
(SQ)

MIC 205: Microbiology (SG) AND MIC  
206: Microbiology Laboratory (SG)

PHY 131: University Physics II: Electricity  
and Magnetism (SQ) AND PHY 132:  
University Physics Laboratory II (SQ)

#### 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.

