2023 - 2024 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-CAI: The ASU Experience	1		• If ENG 105 is taken, a three credit hour elective course must also be taken prior to graduation.
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	• View ASU Online first-year student registration information here.
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	• Prep for success using the First-Year Student Guide. • Join a Fulton community. • Explore engineering and technical professions. • ASU 101 is only required of new first-year students transferring in fewer than 24 hours to ASU.
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	
⚠ 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	• Create a Handshake profile.
MAT 266: Calculus for Engineers II (MA)	3	C	• Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
⚠ 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	
CSE 230: Computer Organization and Assembly Language Programming	3	C	

| | | Term hours subtotal: | 6 | | |

Term 3 - B 30 - 36 Credit Hours	Hours	Minimum Grade	Notes
CSE 240: Introduction to Programming Languages	3	C	• Prep for success using the Sophomore Guide.
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 Critical course signified by ◆	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	• Pursue an undergraduate research experience.
SER 216: Software Enterprise: Personal Process and Quality	3	C	• Apply for internships.
Term hours subtotal:	6		• Attend career fairs and events.

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 Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ SER 334: Operating Systems and System Programming	3	C	• Plan for success using the Junior Guide.
PHY 121: University Physics I: Mechanics (SQ)	3	C	
PHY 122: University Physics Laboratory I (SQ)	1	C	• Network at student organization competitions or professional societies.
Term hours subtotal:	7		

Term 6 - A 61 - 67 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ SER 321: Principles of Distributed Software Systems	3	C	• During the junior year of the program, students should contact an academic advisor to identify course options.
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Term hours subtotal:	6		

Term 6 - B 67 - 73 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ SER 316: Software Enterprise: Construction and Transition	3	C	• Research and prepare for graduate school.
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).			• Develop a professional profile online.
Term hours subtotal:	6		

Term 7 - A 73 - 79 Credit Hours Necessary course signified by ⭐	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		• 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.
SER 4** Elective	3	C	
Term hours subtotal:	7		

Term 8 - A 86 - 93 Credit Hours Necessary course signified by ⭐	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	• During the junior year of the program, students should contact an academic advisor to identify course options/selection.
Term hours subtotal:	6		

Term 9 - A 99 - 105 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ SER 401: Computing Capstone Project I	3	C	• SER 401 is a Session C course (15 weeks long).
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 Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ SER 402: Computing Capstone Project II	3	C	• SER 402 is a Session C course (15 weeks long).
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
	CSE Upper Division Elective

BIO 201: Human Anatomy and Physiology I (SG) AND BIO 202: Human Anatomy and Physiology II (SG)	EEE Upper Division Elective
	FSE 301: Entrepreneurship and Value Creation
CHM 113: General Chemistry I (SQ) AND CHM 116: General Chemistry II (SQ)	IEE Upper Division Elective
GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I: Laboratory (SQ)	IFT Upper Division Elective
	MAE Upper Division Elective
GLG 102: Introduction to Geology II (Historical) (SG & H) AND GLG 104: Introduction to Geology II-Laboratory (SG)	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 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.