

2024 - 2025 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	3	C	
ENG 107 or ENG 108: First-Year Composition			
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 (QTRS OR CS)	3	C	- View ASU Online first-year student registration information here. - 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.
ENG 101 or ENG 102: First-Year Composition OR			
ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
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 (QTRS OR CS)	3	C	
⚠ MAT 265: Calculus for Engineers I (MATH OR 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 (QTRS OR CS)	3	C	- Create a Handshake profile. - Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
MAT 266: Calculus for Engineers II (MATH OR 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	

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	
MAT 267: Calculus for Engineers III (MATH OR MA) OR MAT 275: Modern Differential Equations (MATH OR MA)	3	C	• Prep for success using the Sophomore Guide .
Complete Mathematics (MATH) 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	
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	6		
Term 4 - B 42 - 48 Credit Hours	Hours	Minimum Grade	Notes
IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR 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 (SCIT OR SQ)	3	C	
PHY 122: University Physics Laboratory I (SCIT OR 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	
Humanities, Arts and Design (HUAD)	3		• During the junior year of the program, students should contact an academic advisor to identify course options.
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	
SER 335: Engineering Secure Software Systems	3	C	• Research and prepare for graduate school .
Term hours subtotal:	6		• Develop a professional profile online .
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
SER 4** Elective	3	C	- 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.
Lab Science Sequence AND Scientific Thinking in Natural Sciences (SCIT)	4		
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 Scientific Thinking in Natural Sciences (SCIT)	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 and Behavioral Sciences (SOBE)	3		
Term hours subtotal:	6		

Term 9 - B 105 - 114 Credit Hours	Hours	Minimum Grade	Notes
American Institutions (AMIT)	3		
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	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).
Sustainability (SUST)	3		
Term hours subtotal:	6		

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

Lab Science Sequence

BIO 181: General Biology I (SCIT OR SQ)
AND BIO 182: General Biology II (SCIT
OR SG)

BIO 201: Human Anatomy and Physiology I
(SCIT OR SG) AND BIO 202: Human
Anatomy and Physiology II (SCIT OR SG)

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

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

GLG 102: Introduction to Geology II
(Historical) (SCIT OR SG) AND GLG 104:
Introduction to Geology II: Laboratory
(SCIT OR SG)

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

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

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

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- University Undergraduate Graduation Requirements

Notes:

Mathematics Placement Assessment score determines placement in first mathematics course.

General Studies designations listed next to courses on the major map were valid for the 2024 - 2025 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.