

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 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 (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 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 (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
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 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
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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
Complete Mathematics (MATH) requirement.		
Term hours subtotal:	6	

- Prep for success using the [Sophomore Guide](#).

Term 4 - A 36 - 42 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
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 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
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IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3	C
SER 216: Software Enterprise: Personal Process and Quality	3	C
Term hours subtotal:	6	

- Pursue an [undergraduate research experience](#).
- Apply for [internships](#).
- Attend [career fairs and events](#).

Term 5 - A 48 - 54 Credit Hours	Hours	Minimum Grade	Notes
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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
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 SER 334: Operating Systems and System Programming	3	C
PHY 121: University Physics I: Mechanics (SCIT OR SQ)	3	C

- Plan for success using the [Junior Guide](#).
- Network at [student organization](#) competitions or professional

PHY 122: University Physics Laboratory I (SCIT OR SQ)	1	C	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.
Humanities, Arts and Design (HUAD)	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. - Develop a professional profile online.
SER 335: Engineering Secure Software Systems	3	C	
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
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		

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		

Course	Hours	Grade
 SER 401: Computing Capstone Project I	3	C
Social and Behavioral Sciences (SOBE)	3	
Term hours subtotal:		6

- SER 401 is a Session C course (15 weeks long).

American Institutions (AMIT)	3
Global Communities, Societies and Individuals (GCSI)	3
Governance and Civic Engagement (CIV)	3
Term hours subtotal:	9

Course	Hours	Grade
 SER 402: Computing Capstone Project II	3	C
Sustainability (SUST)	3	
Term hours subtotal:	6	

- SER 402 is a Session C course (15 weeks long).

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.