



2019 - 2020 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-UC: The ASU Experience	1		<ul style="list-style-type: none"> An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses If ENG 105 is taken, a three (3) semester hour elective course must also be taken prior to graduation ASU 101 is only required of new freshman 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			
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"> View ASU Online first-time freshmen registration information here. Prep for success using the Freshman Guide Join a Fulton community. Explore engineering and technical professions.
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 (CS)	3	C	<ul style="list-style-type: none"> ASU Mathematics Placement Assessment score or transfer math courses determine placement into the first mathematics course at ASU
 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 I (CS)	3	C	<ul style="list-style-type: none"> Create a Handshake profile. Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
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	

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 (MA) OR MAT 275: Modern Differential Equations (MA)	3	C	
Complete Mathematics (MA) requirement.			
Term hours subtotal:		6	<ul style="list-style-type: none"> • Prep for success using the Sophomore Guide. • Consult the Resume, Presentation, and Resource Library for tips on how to create a technical resume, job shadow, do informational interviews and mentor with alumni.
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	
SER 216: Software Enterprise: Personal Process and Quality	3	C	
Term hours subtotal:		6	<ul style="list-style-type: none"> • Pursue an undergraduate research experience. • Apply for internships. • Attend career fairs and events.
Term 5 - A 48 - 54 Credit Hours  Necessary course signified by	Hours	Minimum Grade	Notes
 SER 334: Operating Systems and Networks	3	C	
SER 315: Software Enterprise: Design and Process	3	C	
Term hours subtotal:		6	
Term 5 - B 54 - 60 Credit Hours	Hours	Minimum Grade	Notes
MAT 343: Applied Linear Algebra	3	C	
SER 316: Software Enterprise: Construction and Transition	3	C	
Term hours subtotal:		6	<ul style="list-style-type: none"> • Plan for success using the Junior Guide. • Network at student organization competitions or professional societies.
Term 6 - A 60 - 66 Credit Hours  Necessary course signified by	Hours	Minimum Grade	Notes
 SER 321: Principles of Distributed Software Systems	3	C	
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Term hours subtotal:		6	<ul style="list-style-type: none"> • During the junior year of the program, students should contact an academic advisor to identify course options.
Term 6 - B 66 - 73 Credit Hours	Hours	Minimum Grade	Notes
PHY 121: University Physics I: Mechanics (SQ)	3	C	
PHY 122: University Physics Laboratory I (SQ)	1	C	
SER 335: Engineering Secure Software Systems	3	C	
Term hours subtotal:		7	<ul style="list-style-type: none"> • In addition to PHY 121 and PHY 122, must complete 8 semester hours (2 courses) of lab science from the following: BIO 181, BIO 182, BIO 201, BIO 202, CHM 113, CHM 116, GLG 101/103, GLG 102/104, PHY 131/132. • Research and prepare for graduate school. • Apply for an engineering 4+1 program.

- Develop a [professional profile online](#).

Term 7 - A 73 - 80 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
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 SER 322: Principles of Database Management

3

C

Lab Science Sequence AND Natural Science - General (SG) or
Natural Science - Quantitative (SQ)

4

Term hours subtotal: 7

- In addition to PHY 121 and PHY 122, must complete 8 semester hours (2 courses) of lab science from the following: BIO 181, BIO 182, BIO 201, BIO 202, CHM 113, CHM 116, GLG 101/103, GLG 102/104, PHY 131/132.

Term 7 - B 80 - 87 Credit Hours	Hours	Minimum Grade	Notes
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SER 4** Elective

3

C

Lab Science Sequence AND Natural Science - General (SG) or
Natural Science - Quantitative (SQ)

4

Term hours subtotal: 7

- During the junior year of the program, students should contact an academic advisor to identify course options/selection.
- In addition to PHY 121 and PHY 122, must complete 8 semester hours (2 courses) of lab science from the following: BIO 181, BIO 182, BIO 201, BIO 202, CHM 113, CHM 116, GLG 101/103, GLG 102/104, PHY 131/132.
- Plan for success using the [Senior Guide](#).
- Use [Handshake](#) to apply for full-time positions.
- Complete an in-person or [practice interview](#).

Term 8 - A 87 - 93 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
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 SER 415: Software Enterprise: Inception and Elaboration (L)

3

C

SER 4** Elective

3

C

Term hours subtotal: 6

Term 8 - B 93 - 99 Credit Hours	Hours	Minimum Grade	Notes
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SER 416: Software Enterprise: Project and Process Management

3

C


SER 4** Elective

3

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 Necessary course signified by 	Hours	Minimum Grade	Notes
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 SER 401: Computing Capstone Project I

3

C

Humanities, Arts and Design (HU) OR Social-Behavioral Sciences (SB)

3

Term hours subtotal: 6

Term 9 - B 105 - 114 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
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Technical Elective

3

C

Upper Division Social-Behavioral Sciences (SB) (HST 318 recommended)

3

Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)

3

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

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	
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)	CSE Upper Division Elective
BIO 201: Human Anatomy and Physiology I (SG) AND BIO 202: Human Anatomy and Physiology II (SG)	IFT Upper Division Elective
CHM 113: General Chemistry I (SQ) AND CHM 116: General Chemistry II (SQ)	SER Upper Division Elective
PHY 131: University Physics II: Electricity and Magnetism (SQ) AND PHY 132: University Physics Laboratory II (SQ)	
Note: Students who want to take PHY121/122 and PHY131/132 for their Lab Science Sequence will need to select a different lab science course (4 hours) from the list.	

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 2019 - 2020 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.