

2024 - 2025 Major Map

Engineering Management, BSE

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

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

Term 1 - A 0 - 7 Credit Hours	Hours	Minimum Grade	Notes
ASU 101-CAI: The ASU Experience	1		- ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students - Prep for success using the First-Year Student Guide. - Join a Fulton community. - Explore engineering and technical professions.
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	7		

Term 1 - B 7 - 13 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	- View ASU Online first-year student registration information here. - If ENG 105 is taken, a 3 credit hour elective must also be taken prior to graduation.
ENG 101: First-Year Composition or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107: First-Year Composition or ENG 108: First-Year Composition	3	C	
Term hours subtotal:	6		

Term 2 - A 13 - 19 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 266: Calculus for Engineers II (MATH OR MA)	3	C	
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	6		

Term 2 - B 19 - 24 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
FSE 100: Introduction to Engineering	2	C	- Create a Handshake profile. - Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
American Institutions (AMIT)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			

Term hours subtotal: 5

Term 3 - A 24 - 30 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
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 CSE 110: Principles of Programming (QTRS OR CS)	3	C
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MAT 267: Calculus for Engineers III (MATH OR MA)	3	C
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Term hours subtotal: 6

Term 3 - B 30 - 36 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
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 CSE 205: Object-Oriented Programming and Data Structures (QTRS OR CS)	3	C
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ECN 211: Macroeconomic Principles (SOBE OR SB) OR ECN 212: Microeconomic Principles (SOBE OR SB)	3	
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Complete Mathematics (MATH) requirement.		
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Term hours subtotal: 6

Term 4 - A 36 - 43 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
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 ACC 231: Uses of Accounting Information I	3	C
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PHY 121: University Physics I: Mechanics (SCIT OR SQ) AND PHY 122: University Physics Laboratory I (SCIT OR SQ)	4	C
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Term hours subtotal: 7

Term 4 - B 43 - 49 Credit Hours	Hours	Minimum Grade	Notes
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ACC 241: Uses of Accounting Information II	3	C
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MAT 343: Applied Linear Algebra	3	C
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Term hours subtotal: 6

Term 5 - A 49 - 55 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
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 IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3	C
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Governance and Civic Engagement (CIVI)	3	
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Term hours subtotal: 6

Term 5 - B 55 - 61 Credit Hours	Hours	Minimum Grade	Notes
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- Prep for success using the [Sophomore Guide](#).

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

- IEE380 is a Session C course (15 weeks long).

Math or Science Elective	3	C	
SUST Track Course	3		
Term hours subtotal:	6		
Term 6 - A 61 - 67 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ IEE 300: Economic Analysis for Engineers	3	C	
Industry Focus Area Elective	3	C	
Term hours subtotal:	6		
Term 6 - B 67 - 74 Credit Hours	Hours	Minimum Grade	Notes
CHM 113: General Chemistry I (SCIT OR SQ) OR CHM 114: General Chemistry for Engineers (SCIT OR SQ)	4		
IEE 454: Risk Management	3	C	
Term hours subtotal:	7		
Term 7 - A 74 - 80 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ IEE 458: Project Management	3	C	
Math or Science Elective	3	C	
Term hours subtotal:	6		
Term 7 - B 80 - 86 Credit Hours	Hours	Minimum Grade	Notes
IEE 431: Engineering Administration (L)	3	C	
Upper Division Industry Focus Area Elective	3	C	
Term hours subtotal:	6		
Term 8 - A 86 - 92 Credit Hours	Hours	Minimum Grade	Notes
IEE 369: Work Analysis and Design (L)	3	C	
IEE 381: Lean Six Sigma Methodology	3	C	
Term hours subtotal:	6		
Term 8 - B 92 - 96 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes

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

- Students who have credit for CHM113 should take CHM116.
- Research and prepare for [graduate school](#).
- Apply for an [engineering accelerated program](#).
- Develop a [professional profile online](#).

- Plan for success using the [Senior Guide](#).
- Use [Handshake](#) to apply for full-time positions.
- Complete an in person or virtual [practice interview](#).

- IEE 369 is a Session C course (15 weeks long).

 IEE 321: Professional Engineering Practice	1	C
Upper Division Industry Focus Area Elective	3	C
Term hours subtotal:		4

Term 9 - A 96 - 102 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
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 IEE 485: Systems Design Capstone I (L)	3	C	IEE 485 is a Session C course (15 weeks long).
IEE 477: System Dynamics and Thinking	3	C	
Term hours subtotal:		6	

Term 9 - B 102 - 108 Credit Hours	Hours	Minimum Grade	Notes
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Complete 2 courses: Upper Division Industry Focus Area Elective	6	C
Term hours subtotal:		6

Term 10 - A 108 - 114 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
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 IEE 486: Systems Design Capstone II (L)	3	C	IEE 486 is a Session C course (15 weeks long).
IEE 456: Introduction to Systems Engineering	3	C	
Term hours subtotal:		6	

Term 10 - B 114 - 120 Credit Hours	Hours	Minimum Grade	Notes
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MGT 300: Principles of Management and Leadership	3	C
Global Communities, Societies and Individuals (GCSI)	3	
Term hours subtotal:		6

- Major maps are built based on full-time enrollment, but can be adjusted as necessary for part-time attendance.
 - Some Industry Focus Area Electives are sequential and may be offered only in the Fall or Spring semester.
 - Some Industry Focus Area Electives may require additional prerequisites.
 - For more information on Industry Focus Areas please visit the [SCAI website](#).

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

SUST Track Course

CEE 181: Technological, Social, and Sustainable Systems (SUST OR HU) or

Industry Focus Area (Business Analytics)

Complete 5 classes from the list below:

Industry Focus Area Elective (Mechanical Systems Industry)

Required Courses:

SOS 181: Technological, Social, and Sustainable Systems (SUST OR HU)	IEE 3** Elective	MAE 201: Mechanics of Particles and Rigid Bodies I: Statics
SOS 100: Introduction to Sustainability (SUST OR G)	IEE 4** Elective	MAE 241: Introduction to Thermodynamics
SOS 110: Sustainable World (SUST OR SB)	Math or Science Elective (Business Analytics Industry)	MAE 384: Advanced Mathematical Methods for Engineers (QTRS OR CS)
SOS 111: Sustainable Cities (SUST OR (HU or SB) & G) or PUP 190: Sustainable Cities (SUST OR (HU or SB) & G)	MAT 275: Modern Differential Equations (MATH OR MA)	MAE OR MEE OR MSE 3** Elective
SOS 171: The Thread of Energy (SUST OR G) or GCU 171: The Thread of Energy (SUST OR G)	PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ)	MAE OR MEE OR MSE 4** Elective
		Math or Science Elective (Mechanical Systems Industry)
		MAT 275: Modern Differential Equations (MATH OR MA)
		MAE 202: Mechanics of Particles and Rigid Bodies II: Dynamics
		MAE 213: Mechanics of Materials
		MSE 250: Structure and Properties of Materials
		PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ)
Industry Focus Area Elective (Software Industry)		
CSE 240: Introduction to Programming Languages		
CSE 310: Data Structures and Algorithms		
CSE 360: Introduction to Software Engineering		
CSE OR SER 3** Elective		
CSE OR SER 4** Elective		
Math or Science Elective (Software Industry)		
MAT 243: Discrete Mathematical Structures (required)		
General Math or Science Course Approved by SCAI Advisor		

- **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.