













## 2024 - 2025 Major Map

### Industrial Engineering, **BSE**

School/College: Ira A. Fulton Schools of Engineering  
ESIEEBSE

Term 1 0 - 15 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
ASU 101-CAI: The ASU Experience	1		<ul style="list-style-type: none"> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students and should be taken in the first semester.</li> <li>Prep for success using the <b>First-Year Student Guide</b>.</li> <li>Join a <b>Fulton community</b>.</li> <li>Explore <b>engineering and technical professions</b>.</li> </ul>
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	
MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	
Complete 2 courses: Humanities, Arts and Design (HUAD)	6		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		
Term 2 15 - 31 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CSE 110: Principles of Programming (QTRS OR CS)	3	C	<ul style="list-style-type: none"> <li>Students with credit for CHM 113 must take CHM 116.</li> <li>Create a <b>Handshake</b> profile.</li> <li>Get involved with EPICS, the Generator Labs, and the <b>Fulton Start-Up Center</b>.</li> </ul>
CHM 113: General Chemistry I (SCIT OR SQ) OR CHM 114: General Chemistry for Engineers (SCIT OR SQ)	4		
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	
MAT 266: Calculus for Engineers II (MATH OR MA)	3	C	
American Institutions (AMIT)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
 Complete MAT 170 OR MAT 171 OR MAT 265 OR MAT 270 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		
Term 3 31 - 46 Credit Hours <b>Critical course signified by</b> 	Hours	Minimum Grade	Notes
 CSE 205: Object-Oriented Programming and Data Structures (QTRS OR CS)	3	C	<ul style="list-style-type: none"> <li>Prep for success using the <b>Sophomore Guide</b>.</li> </ul>
 IEE 210: Introduction to Industrial Engineering	3	C	
ECN 211: Macroeconomic Principles (SOBE OR SB) OR ECN 212: Microeconomic Principles (SOBE OR SB)	3	C	
MAT 267: Calculus for Engineers III (MATH OR MA)	3	C	
Governance and Civic Engagement (CIVI)	3		
 Complete MAT 266 OR MAT 271 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Complete Mathematics (MATH) requirement.			

Term hours subtotal: 15

Term 4 46 - 62 Credit Hours <b>Critical course signified by</b> ⚠	Hours	Minimum Grade	Notes
⚠ IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3	C	<ul style="list-style-type: none"> <li>Pursue an <b>undergraduate research experience</b>.</li> <li>Apply for <b>internships</b>.</li> <li>Attend <b>career fairs and events</b>.</li> </ul>
⚠ MAT 275: Modern Differential Equations (MATH OR MA)	3	C	
⚠ PHY 121: University Physics I: Mechanics (SCIT OR SQ) AND PHY 122: University Physics Laboratory I (SCIT OR SQ)	4	C	
IEE 305: Information Systems Engineering	3	C	
Global Communities, Societies and Individuals (GCSI)	3-4		
Term hours subtotal:	16-17		

Term 5 62 - 78 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ IEE 385: Engineering Statistics: Probability	3	C	<ul style="list-style-type: none"> <li>Plan for success using the <b>Junior Guide</b>.</li> <li>Network at <b>student organization</b> competitions or professional societies.</li> </ul>
IEE 300: Economic Analysis for Engineers	3	C	
MAE 201: Mechanics of Particles and Rigid Bodies I: Statics	3		
MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	3	C	
PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ) AND PHY 132: University Physics Laboratory II (SCIT OR SQ)	4		
Term hours subtotal:	16		

Term 6 78 - 92 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ IEE 321: Professional Engineering Practice	1	C	<ul style="list-style-type: none"> <li>Research and prepare for <b>graduate school</b>.</li> <li>Apply for a <b>Fulton Schools 4+1 program</b>.</li> <li>Develop a <b>professional profile online</b>.</li> </ul>
★ IEE 376: Operations Research Deterministic Techniques/Applications	4	C	
IEE 369: Work Analysis and Design (L)	3	C	
IEE 4** Elective	3	C	
Sustainability (SUST)	3		
Term hours subtotal:	14		

Term 7 92 - 108 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ IEE 485: Systems Design Capstone I (L)	3	C	<ul style="list-style-type: none"> <li>Plan for success using the <b>Senior Guide</b>.</li> <li>Use <b>Handshake</b> to apply for full-time positions.</li> <li>Complete an in person or virtual <b>practice interview</b>.</li> </ul>
IEE 470: Stochastic Operations Research	3	C	
IEE 474: Quality Control	3	C	
IEE 475: Simulating Stochastic Systems (QTRS OR CS)	4	C	
IEE 4** Elective	3	C	
Term hours subtotal:	16		

Term 8 108 - 120 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ IEE 486: Systems Design Capstone II (L)	3	C	<ul style="list-style-type: none"> <li>Some IEE Major Electives may require additional prerequisites.</li> </ul>
IEE 461: Production Control	3	C	
Upper Division Industrial Engineering Major Electives	3	C	
IEE 4** Elective	3	C	
Term hours subtotal:	12		

- Some IEE Major Electives may require additional prerequisites.

- For more information on Industrial Engineering requirements please visit the [SCAI website](#).

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

Industrial Engineering Major Electives
CEE 400: Earth Systems Engineering and Management (SUST OR (L or HU) & H)
CSE 310: Data Structures and Algorithms
CSE 330: Operating Systems
CSE 360: Introduction to Software Engineering
CSE 494: Data Mining
EEE 352: Properties of Electronic Materials
EEE 435: Fundamentals of CMOS and MEMS
EEE 436: Fundamentals of Solid-State Devices
FSE 301: Entrepreneurship and Value Creation
FSE 404: EPICS Gold: EPICS in Action
IEE 3** Elective
IEE 4** Elective
MAE 384: Advanced Mathematical Methods for Engineers (QTRS OR CS) or CEE 384: Numerical Methods for Engineers (QTRS OR CS)
MAT 300: Mathematical Structures (L)
STP 425: Stochastic Processes
STP 429: Applied Regression (QTRS OR CS)

- **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.