






















2024 - 2025 Major Map

Civil Engineering, **BSE**

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




Term 1 0 - 16 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 FSE 100: Introduction to Engineering	2	C	<ul style="list-style-type: none"> • ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students and should be completed the first semester. • If ENG 105 is taken, a 3 hour applicable elective must also be taken prior to graduation. See advisor. • Prep for success using the First-Year Student Guide. • Join a Fulton community. • Explore engineering and technical professions.
 MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	
ASU 101-CEE: The ASU Experience	1		
CHM 114: General Chemistry for Engineers (SCIT OR SQ) OR CHM 116: General Chemistry II (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	
Humanities, Arts and Design (HUAD)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		
Term 2 16 - 31 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 MAT 242: Elementary Linear Algebra	2	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 (MATH OR MA)	3	C	
 PHY 121: University Physics I: Mechanics (SCIT OR SQ)	3	C	
 PHY 122: University Physics Laboratory I (SCIT OR SQ)	1	C	
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	
Humanities, Arts and Design (HUAD)	3		
 Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
 Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		
Term 3 31 - 47 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CEE 210: Engineering Mechanics I: Statics	3	C	<ul style="list-style-type: none"> • Prep for success using the Sophomore Guide.
 MAT 267: Calculus for Engineers III (MATH OR MA)	3	C	
 MAT 275: Modern Differential Equations (MATH OR MA)	3	C	
 PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ)	3	C	
 PHY 132: University Physics Laboratory II (SCIT OR SQ)	1	C	
ECN 211: Macroeconomic Principles (SOBE OR SB) OR ECN 212: Microeconomic Principles (SOBE OR SB)	3		
 Minimum 2.00 GPA ASU Cumulative.			
Complete Mathematics (MATH) requirement.			

Term hours subtotal: 16

Term 4 47 - 62 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 CEE 212: Engineering Mechanics II: Dynamics	3	C	<ul style="list-style-type: none"> Pursue an undergraduate research experience. Apply for internships. Attend career fairs and events.
 CEE 213: Introduction to Deformable Solids	3	C	
BIO 181: General Biology I (SCIT OR SQ) OR BIO 182: General Biology II (SCIT OR SG) OR CHM 231: Elementary Organic Chemistry (SCIT OR SQ) OR GLG 101: Introduction to Geology I (Physical) (SCIT OR SQ)	3-4		
IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3		
MAE 241: Introduction to Thermodynamics	3		
Term hours subtotal:	15-16		

Term 5 62 - 77 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 CEE 321: Structural Analysis and Design	3		<ul style="list-style-type: none"> Plan for success using the Junior Guide. Network at student organization competitions or professional societies.
CEE 351: Geotechnical Engineering	3		
CEE 353: Civil Engineering Materials	3		
CEE 384: Numerical Methods for Engineers (QTRS OR CS)	3		
Global Communities, Societies and Individuals (GCSI)	3		
Term hours subtotal:	15		

Term 6 77 - 92 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 CEE 300: Engineering Business Practice (L)	3		<ul style="list-style-type: none"> Research and prepare for graduate school. Apply for an engineering 4+1 program. Develop a professional profile online.
 CEE 361: Introduction to Environmental Engineering	3		
CEE 341: Fluid Mechanics for Civil Engineers	3		
CEE 372: Transportation Engineering	3		
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	15		

Term 7 92 - 106 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 CEE 400: Earth Systems Engineering and Management (SUST OR (L or HU) & H)	3		<ul style="list-style-type: none"> Technical Elective and Design Elective requirements: See advisor for guidance in selection. Plan for success using the Senior Guide. Use Handshake to apply for full-time positions. Complete an in-person or virtual practice interview.
Upper Division Design Elective	3		
Complete 2 courses: Technical Elective	6		
 CEE 487: Integrated Civil, Construction, and Environmental Engineering Design I (L)	2		
Term hours subtotal:	14		

Term 8 106 - 120 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 CEE 488: Integrated Civil, Construction, and Environmental Engineering Design II (L)	2		<ul style="list-style-type: none"> Technical Elective and Design Elective requirements: See advisor for guidance in selection.
Upper Division Design Elective	3		
Complete 2 courses: Upper Division Technical Elective	6		
American Institutions (AMIT)	3		
Term hours subtotal:	14		

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

Technical Elective	Design Elective
CEE 281: Surveying	CEE 412: Pavement Analysis and Design
CEE 412: Pavement Analysis and Design	CEE 420: Steel Structures
CEE 420: Steel Structures	CEE 421: Concrete Structures
CEE 421: Concrete Structures	CEE 441: Water Resources Engineering
CEE 423: Structural Design	CEE 452: Foundations
CEE 440: Hydrology	CEE 462: Unit Operations in Environmental Engineering
CEE 441: Water Resources Engineering	CEE 466: Urban Water System Design
CEE 452: Foundations	CEE 475: Highway Geometric Design
CEE 453: Earth Structures Engineering	
CEE 462: Unit Operations in Environmental Engineering	
CEE 466: Urban Water System Design	
CEE 467: Environmental Microbiology	
CEE 470: Sustainable Environmental Biotechnologies	
CEE 474: Transportation Systems Planning	
CEE 475: Highway Geometric Design	
CEE 481: Civil Engineering Project Management	
CEE 483: Highway Materials, Construction, and Quality	
CEE 485: Sustainable Civil and Environmental Systems Engineering	
CEE 493: Honors Thesis (L)	
CEE 494: Special Topics	
CHE 469: Air Quality Engineering	
FSE 301: Entrepreneurship and Value Creation	
IEE 431: Engineering Administration (L)	

- **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.