



















2024 - 2025 Major Map




Civil Engineering (Sustainable Engineering), **BSE**

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

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	
CEE 181: Technological, Social, and Sustainable Systems (SUST OR HU)	3		
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	
 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	
IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3		
MAE 241: Introduction to Thermodynamics	3		
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		
Term hours subtotal:		15	

Term 5 62 - 77 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 CEE 361: Introduction to Environmental Engineering	3		<ul style="list-style-type: none"> Plan for success using the Junior Guide. Network at student organization competitions or professional societies.
CEE 341: Fluid Mechanics for Civil Engineers	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"> Apply for an engineering 4+1 program. Develop a professional profile online.
CEE 321: Structural Analysis and Design	3		
CEE 351: Geotechnical Engineering	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 485: Sustainable Civil and Environmental Systems Engineering	3		<ul style="list-style-type: none"> 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.
 CEE 487: Integrated Civil, Construction, and Environmental Engineering Design I (L)	2		
Upper Division Design Elective	3		
Technical Elective	3		
American Institutions (AMIT)	3		
Term hours subtotal:		14	

Term 8 106 - 120 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 requirements: See advisor for guidance in selection.
 SOS 300: Advanced Concepts and Integrated Approaches in Sustainability	3		
 CEE 488: Integrated Civil, Construction, and Environmental Engineering Design II (L)	2		
Upper Division Design Elective	3		
Humanities, Arts and Design (HUAD)	3		

Term hours subtotal: 14

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

Design Electives	Approved Technical Elective
CEE 412: Pavement Analysis and Design	BCH 361: Advanced Principles of Biochemistry
CEE 420: Steel Structures	BIO 320: Fundamentals of Ecology
CEE 421: Concrete Structures	CEE 281: Surveying
CEE 441: Water Resources Engineering	CEE 412: Pavement Analysis and Design
CEE 452: Foundations	CEE 420: Steel Structures
CEE 462: Unit Operations in Environmental Engineering	CEE 421: Concrete Structures
CEE 466: Urban Water System Design	CEE 440: Hydrology
CEE 475: Highway Geometric Design	CEE 441: Water Resources Engineering
	CEE 452: Foundations
	CEE 462: Unit Operations in Environmental Engineering
	CEE 466: Urban Water System Design
	CEE 474: Transportation Systems Planning
	CEE 475: Highway Geometric Design
	CEE 481: Civil Engineering Project Management
	CEE 483: Highway Materials, Construction, and Quality
	CEE 493: Honors Thesis (L)
	CEE 494: Sustainable Energy and Material Use
	CEE 499: Individualized Instruction
	CHM 302: Environmental Chemistry
	CHM 341: Elementary Physical Chemistry
	CON 453: Construction Technology
	PUP 442: Environmental Planning
	FSE 301: Entrepreneurship and Value Creation
	CEE 423: Structural Design
	CEE 467: Environmental Microbiology
	CEE 470: Sustainable Environmental Biotechnologies
	CEE 453: Earth Structures Engineering

- **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.