2024 - 2025 Major Map
Electrical Engineering, BSE

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

Term 1 0 - 16 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	• ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students and should be taken the first semester. • If ENG 105 is taken, a 3 hour applicable elective must also be taken prior to graduation. See advisor. • Students who have credit for CHM 113 should take CHM 116. • Prep for success using the First-Year Student Guide. • Join a Fulton community. • Explore engineering and technical professions.
ASU 101-EEE: The ASU Experience	1		
CHM 114: General Chemistry for Engineers (SCIT OR SQ) OR CHM 116: General Chemistry II (SCIT OR SQ)	4		
CSE 100: Principles of Programming with C++ (QTRS OR CS) OR CSE 110: Principles of Programming (QTRS OR CS)	3	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	
FSE 100: Introduction to Engineering	2		
Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 2 16 - 32 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
MAT 266: Calculus for Engineers II (MATH OR MA)	3	C	• Create a Handshake profile. • Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
PHY 121: University Physics I: Mechanics (SCIT OR SQ)	3	C	
PHY 122: University Physics Laboratory I (SCIT OR SQ)	1	C	
EEE 120: Digital Design Fundamentals	3	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:	16		

Term 3 32 - 46 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
EEE 202: Circuits I	4		• 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
!	Complete First-Year Composition requirement.		
!	Minimum 2.00 GPA ASU Cumulative.		
	Complete Mathematics (MATH) requirement.		
	Term hours subtotal:	14	

Term 4 46 - 61 Credit Hours Critical course signified by !	**Hours**	**Minimum Grade**	**Notes**
! EEE 203: Signals and Systems I	3		• Pursue an undergraduate research experience. • Apply for internships. • Attend career fairs and events.
! EEE 241: Fundamentals of Electromagnetics	3		
MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra	3	C	
PHY 241: University Physics III	3	C	
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	15		

Term 5 61 - 75 Credit Hours Necessary course signified by ★	**Hours**	**Minimum Grade**	**Notes**
★ EEE 334: Circuits II	4		• Plan for success using the Junior Guide. • Network at student organization competitions or professional societies.
EEE 350: Random Signal Analysis	3		
Upper Division Area Pathway Course	4		
American Institutions (AMIT)	3		
Term hours subtotal:	14		

Term 6 75 - 90 Credit Hours Necessary course signified by ★	**Hours**	**Minimum Grade**	**Notes**
★ *Complete 3 courses:* Upper Division Area Pathway Course	12		• Research and prepare for graduate school. • Apply for an engineering 4+1 program. • Develop a professional profile online.
ECN 211: Macroeconomic Principles (SOBE OR SB) OR ECN 212: Microeconomic Principles (SOBE OR SB)	3		
Term hours subtotal:	15		

Term 7 90 - 105 Credit Hours Necessary course signified by ★	**Hours**	**Minimum Grade**	**Notes**

★	EEE 488: Senior Design Laboratory I (L)	3
	Complete 3 courses: Upper Division Technical Elective	9
	Sustainability (SUST)	3
	Term hours subtotal:	15

- Plan for success using the Senior Guide.
- Use Handshake to apply for full-time positions.

Term 8 105 - 120 Credit Hours Necessary course signified by ★	**Hours**	**Minimum Grade**	**Notes**
★ EEE 489: Senior Design Laboratory II (L)	3		
Complete 2 courses: Upper Division Technical Elective	6		
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	15		

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

Technical Electives
EEE 404: Real-Time DSP Systems
EEE 405: Machine Learning Basics with Deployment to FPGAs
EEE 407: Digital Signal Processing
EEE 419: Python for Rapid Engineering Solutions
EEE 425: Digital Systems and Circuits
EEE 433: Analog Integrated Circuits
EEE 434: Quantum Mechanics for Engineers
EEE 435: Fundamentals of CMOS and MEMS
EEE 436: Fundamentals of Solid-State Devices
EEE 437: Optoelectronics
EEE 439: Semiconductor Facilities and Cleanroom Practices
EEE 443: Antennas for Wireless Communications
EEE 445: Microwaves
EEE 448: Fiber Optics
EEE 455: Communication Systems
EEE 459: Communication Networks

Area Pathway Course
EEE 304: Signals and Systems II
EEE 333: Hardware Design Languages and Programmable Logic
EEE 335: Analog and Digital Circuits
EEE 341: Engineering Electromagnetics
EEE 352: Properties of Electronic Materials
EEE 360: Energy Systems and Power Electronics
EEE 394: Quantum Mechanics for Quantum Information Science

- EEE 460: Nuclear Power Engineering
- EEE 463: Electrical Power Plants
- EEE 465: Photovoltaic Energy Conversion
- EEE 470: Electric Power Devices
- EEE 471: Power System Analysis
- EEE 472: Power Electronics and Power Management
- EEE 473: Electrical Machinery
- EEE 480: Feedback Systems
- EEE 481: Computer-Controlled Systems
- EEE 492: Honors Directed Study
- EEE 493: Honors Thesis (L)
- EEE 498: Emerging Technology in Automotive & Transportation
- EEE 498: Lithium-Ion Battery Technlgy Automtve Electrifictn
- EEE 498: Manufacturing Science of Solar Cells
- EEE 498: Nuclear Prolif Secur & Safegrd
- EEE 498: Quantum Optics and Quantum Information
- EEE 498: Renewable Energy Technology and Systems
- EEE 498: Science and Technology of Solar Cell Fabrication
- EEE 498: Augmented Reality and Virtual Reality Systems

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- University Undergraduate Graduation Requirements

Notes:
Mathematics Placement Assessment score determines placement in first mathematics course.
Accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org/.

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.