2024 - 2025 Major Map

Computer Systems Engineering (Cybersecurity), BSE

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

Term 1 0 - 15 Credit Hours Critical course signified by ⬥	Hours	Minimum Grade	Notes
⬥ CSE 110: Principles of Programming (QTRS OR CS)	3	C	• ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students and should be taken in the first semester. • If ENG 105 is taken, a three (3) semester hour elective must also be taken prior to graduation. • Prep for success using the First-Year Student Guide. • Join a Fulton community. • Explore engineering and technical professions.
ASU 101-CAI: The ASU Experience	1		
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	
Humanities, Arts and Design (HUAD)	3		
⬥ Complete Mathematics (MATH) requirement.			
⬥ Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		

Term 2 15 - 31 Credit Hours Critical course signified by ⬥	Hours	Minimum Grade	Notes
⬥ CSE 205: Object-Oriented Programming and Data Structures (QTRS OR CS)	3	C	• Create a Handshake profile. • Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
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	
Biology or Chemistry Course	4		
Humanities, Arts and Design (HUAD)	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 - 47 Credit Hours Critical course signified by ⬥	Hours	Minimum Grade	Notes
⬥ EEE 120: Digital Design Fundamentals	3	C	• Prep for success using the Sophomore Guide.
⬥ MAT 243: Discrete Mathematical Structures	3	C	
MAT 267: Calculus for Engineers III (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	
Social and Behavioral Sciences (SOBE)	3		
⬥ Complete MAT 266 OR MAT 271 course(s).			
⬥ Minimum 2.00 GPA ASU Cumulative.			

Complete Mathematics (MATH) requirement.			
Term hours subtotal:	16		

Term 4 47 - 63 Credit Hours Critical course signified by ⬥	Hours	Minimum Grade	Notes
⬥ CSE 220: Programming for Computer Engineering	3	C	• Pursue an undergraduate research experience.
⬥ CSE 230: Computer Organization and Assembly Language Programming	3	C	• Apply for internships.
IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3	C	• Attend career fairs and events.
PHY 131: University Physics II: Electricity and Magnetism (SCIT OR SQ) AND PHY 132: University Physics Laboratory II (SCIT OR SQ)	4	C	
Global Communities, Societies and Individuals (GCSI)	3		
⬥ Complete MAT 267 OR MAT 272 course(s).			
Term hours subtotal:	16		

Term 5 63 - 78 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 310: Data Structures and Algorithms	3	C	• Plan for success using the Junior Guide.
CSE 301: Computing Ethics	1	C	• Network at student organization competitions or professional societies.
CSE 302: Circuits for Computer Engineers	3	C	
CSE 320: Design and Synthesis of Digital Hardware	3	C	
MAT 343: Applied Linear Algebra	3	C	
Elective	2		
Term hours subtotal:	15		

Term 6 78 - 93 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 325: Embedded Microprocessor Systems	3	C	• Research and prepare for graduate school.
⭐ CSE 330: Operating Systems	3	C	• Apply for an engineering 4+1 program.
⭐ CSE 360: Introduction to Software Engineering	3	C	• Develop a professional profile online.
CSE 365: Information Assurance	3	C	
Sustainability (SUST)	3		
Term hours subtotal:	15		

Term 7 93 - 108 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 423: Systems Capstone Project I (L)	3	C	• Plan for success using the Senior Guide.
CSE 434: Computer Networks	3	C	• Use Handshake to apply for full-time positions.
Upper Division CSE Technical Elective	3	C	• Complete an in person or virtual practice interview.
Upper Division Cybersecurity Focus Courses	3	C	
American Institutions (AMIT)	3		
Term hours subtotal:	15		

Term 8 108 - 120 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 424: Systems Capstone Project II (L)	3	C	
CSE 420: Computer Architecture I	3	C	
Upper Division Cybersecurity Focus Courses	3	C	
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	12		

- - Technical Electives may require additional prerequisites.
  - For additional information on major curriculum, please visit theÂComputer Systems Engineering (Cybersecurity) Degree Requirements website.

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

Biology or Chemistry Course	Cybersecurity Focus Courses	CSE Technical Elective
BIO 181: General Biology I (SCIT OR SQ)	CSE 466: Computer Systems Security	BME 494: Applied Computational Behavioral Science
BIO 182: General Biology II (SCIT OR SG)	CSE 467: Data and Information Security	CPI 350: Evaluation of Informatics Systems
CHM 113: General Chemistry I (SCIT OR SQ)	CSE 468: Computer Network Security	CPI 411: Graphics for Games
CHM 114: General Chemistry for Engineers (SCIT OR SQ)	CSE 469: Computer and Network Forensics	CSE 335: Principles of Mobile Application Development
CHM 116: General Chemistry II (SCIT OR SQ)	CSE 494: Artificial Intelligence for Cyber Security	CSE 340: Principles of Programming Languages
		CSE 355: Introduction to Theoretical Computer Science
		CSE 4** Elective
		DAT 300: Mathematical Tools for Data Science
		DAT 301: Exploring Data in R and Python
		DAT 401: Statistical Modeling and Inference for Data Science
		DAT 402: Machine Learning for Data Science
		EEE 304: Signals and Systems II
		EEE 335: Analog and Digital Circuits
		EEE 350: Random Signal Analysis
		EEE 404: Real-Time DSP Systems
		EEE 407: Digital Signal Processing
		EEE 425: Digital Systems and Circuits
		EEE 455: Communication Systems
		EEE 480: Feedback Systems
		EEE 481: Computer-Controlled Systems
		FSE 301: Entrepreneurship and Value Creation
		FSE 394: Engineering for Humanity
		FSE 404: EPICS Gold: EPICS in Action
		IEE 385: Engineering Statistics: Probability
		MAT 416: Graph Theory
		MAT 421: Applied Computational Methods (MATH OR CS)

	MAT 447: Cryptography I
	MAT 448: Cryptography II
	PHY 302: Mathematical Methods in Physics II
	PHY 333: Electronic Circuits and Measurements
	PHY 441: Statistical and Thermal Physics
	SER 416: Software Enterprise: Project and Process Management

- **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.