2024 - 2025 Major Map

Computer Science (Cybersecurity), BS

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

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.
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	• If ENG 105 is taken, a 3 credit hour elective must also be taken prior to graduation.
FSE 100: Introduction to Engineering	2	C	• Prep for success using the First-Year Student Guide.
MAT 265: Calculus for Engineers I (MATH OR MA)	3	C	• Join a Fulton community.
Humanities, Arts and Design (HUAD)	3		• Explore engineering and technical professions.
⬥ Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	15		

Term 2 15 - 30 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.
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	• Get involved with EPICS, the Generator Labs, and the Fulton Start-Up Center.
MAT 266: Calculus for Engineers II (MATH OR MA)	3	C	
Humanities, Arts and Design (HUAD)	3		
Additional Scientific Thinking in Natural Sciences (SCIT) course	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:	15		

Term 3 30 - 46 Credit Hours Critical course signified by ⬥	Hours	Minimum Grade	Notes
⬥ EEE 120: Digital Design Fundamentals	3	C	• Prep for success using the Sophomore Guide.
⬥ CSE 240: Introduction to Programming Languages	3	C	
⬥ MAT 243: Discrete Mathematical Structures	3	C	
MAT 267: Calculus for Engineers III (MATH OR MA) OR CSE 259: Logic in Computer Science	3	C	
Scientific Thinking in Natural Sciences (SCIT)	4		
⬥ Complete MAT 266 OR MAT 271 course(s).			
⬥ Minimum 2.00 GPA ASU Cumulative.			
Complete Mathematics (MATH) requirement.			

	Term hours subtotal:	16		

Term 4 46 - 62 Credit Hours Critical course signified by ❗	Hours	Minimum Grade	Notes
❗ CSE 230: Computer Organization and Assembly Language Programming	3	C	• Pursue an undergraduate research experience. • Apply for internships. • Attend career fairs and events.
❗ CSE 310: Data Structures and Algorithms	3	C	
IEE 380: Probability and Statistics for Engineering Problem Solving (QTRS OR CS)	3	C	
Scientific Thinking in Natural Sciences (SCIT)	4		
Social and Behavioral Sciences (SOBE)	3		
❗ Complete CSE 259 OR MAT 267 OR MAT 272 course(s).			
❗ Minimum 2.00 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 5 62 - 78 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 360: Introduction to Software Engineering	3	C	• Plan for success using the Junior Guide. • Network at student organization competitions or professional societies.
CSE 301: Computing Ethics	1	C	
CSE 355: Introduction to Theoretical Computer Science	3	C	
CSE 365: Information Assurance	3	C	
MAT 343: Applied Linear Algebra	3	C	
American Institutions (AMIT)	3		
Term hours subtotal:	16		

Term 6 78 - 93 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 330: Operating Systems	3	C	• CSE 434 is a prerequisite for CSE 468 which is an option for the Cybersecurity Focus Courses requirement. • Research and prepare for graduate school. • Apply for an engineering 4+1 program. • Develop a professional profile online.
⭐ CSE 340: Principles of Programming Languages	3	C	
CSE 412: Database Management OR CSE 434: Computer Networks OR CSE 445: Distributed Software Development	3	C	
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	15		

Term 7 93 - 108 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 485: Computer Science Capstone Project I (L)	3	C	• 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 Cybersecurity Elective	3	C	
Upper Division Cybersecurity Focus Courses	3	C	
Sustainability (SUST)	3		
Elective	3		
Term hours subtotal:	15		

Term 8 108 - 120 Credit Hours Necessary course signified by ⭐	Hours	Minimum Grade	Notes
⭐ CSE 486: Computer Science Capstone Project II (L)	3	C	
Upper Division Cybersecurity Elective	3	C	
Upper Division Cybersecurity Focus Courses	3	C	

Upper Division Technical Elective	3	C	• Please see course lists below for Technical Electives. Contact SCAI Advising or visit the Scai website for additional information.
Term hours subtotal:	12		

- • Technical Electives may require additional prerequisites.
  - • For additional information on major curriculum, please visit theÂComputer Science Degree Requirements websiteÂand theÂConcentration Requirements website.

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

Cybersecurity Focus Courses	Cybersecurity Electives	Technical Electives
CSE 466: Computer Systems Security	CSE 445: Distributed Software Development	AEE 415: Vibration Analysis
CSE 467: Data and Information Security	CSE 460: Software Analysis and Design	AEE 426: Design of Aerospace Structures
CSE 468: Computer Network Security	CSE 463: Introduction to Human Computer Interaction	AEE 462: Space Vehicle Dynamics and Control
CSE 469: Computer and Network Forensics	CSE 464: Software Quality Assurance and Testing	AEE 463: Aircraft Propulsion
CSE 494: Artificial Intelligence for Cyber Security	CSE 466: Computer Systems Security	AEE 465: Rocket Propulsion
	CSE 467: Data and Information Security	AEE 468: Aircraft Systems Design
	CSE 468: Computer Network Security	AEE 471: Computational Fluid Dynamics
	CSE 469: Computer and Network Forensics	AME 430: Mac Development for Media Arts
	CSE 471: Introduction to Artificial Intelligence	AME 435: Mobile Development
	CSE 494: Artificial Intelligence for Cyber Security	BCH 361: Advanced Principles of Biochemistry
		BCH 461: General Biochemistry
		BCH 462: General Biochemistry
		BIO 340: General Genetics
		BIO 343: Genetic Engineering and Society (L)
		BIO 345: Evolution
		BME 350: Signals and Systems for Bioengineers
		BME 413: Biomedical Instrumentation (L)
		BME 416: Advanced Biomechanics
		BME 494: Applied Computational Behavioral Science
		CEE 412: Pavement Analysis and Design
		CEE 432: Developing Software for Engineering Applications
		CEE 440: Hydrology
		CEE 441: Water Resources Engineering
		CEE 452: Foundations

IEE 376: Operations Research Deterministic Techniques/Applications

IEE 381: Lean Six Sigma Methodology

IEE 385: Engineering Statistics: Probability

IEE 412: Introduction to Financial Engineering

IEE 426: Operations Research in Healthcare

IEE 431: Engineering Administration (L)

IEE 456: Introduction to Systems Engineering

IEE 458: Project Management

IEE 461: Production Control

IEE 470: Stochastic Operations Research

IEE 474: Quality Control

IEE 475: Simulating Stochastic Systems (QTRS OR CS)

MAE 341: Mechanism Analysis and Design

MAE 404: Finite Elements in Engineering

MAE 417: System Dynamics and Control II

MAE 436: Combustion

MAE 455: Polymers and Composites

MAT Upper Division Elective

Except for: MAT 300, MAT 340, MAT 342, MAT 343 and MAT 485

MSE 335: Materials Kinetics

MEE 351: Manufacturing Processes

MEE 434: Internal Combustion Engines

MEE 446: Energy Systems Design II

MSE 415: Mathematical and Computer Methods in Materials (CS)

PHY 302: Mathematical Methods in Physics II

PHY 361: Introductory Modern Physics

PHY 462: Particle and Nuclear Physics

SER 416: Software Enterprise: Project and Process Management

SER 421: Web-Based Applications

SER 422: Web Application Programming

SER 423: Mobile Systems

STP 421: Probability

STP 425: Stochastic Processes

STP 427: Mathematical Statistics

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.