Curriculum - Computer Systems Engineering, BSE

Catalog Year: 2025 - 2026 **General Studies Gold**

Degree: Bachelor of Science in Engineering, BSE

College/School: Ira A. Fulton Schools of Engineering

Plan Code: ESCSEBSE

Minimum credit hours: 120

Upper division minimum credit hours: 49

Requirement	Minimum Grade	Credit Hours
Please see our degree requirements website for links to our flowcharts and our most up to date course lists. https://scai.engineering.asu.edu/computer-systems-engineering/degree-requirements-computer-systems-engineering/		

Computer Systems Engineering Lower Division

CSE 110 Principles of Programming (QTRS)	C	3
EEE 120 Digital Design Fundamentals	C	3
CSE 205 Object-Oriented Programming and Data Structures (QTRS)	C	3
CSE 220 Programming for Computer Engineering	C	3
CSE 230 Computer Organization and Assembly Language Programming	C	3
FSE 100 Introduction to Engineering	C	2

Computer Systems Engineering Upper Division

CSE 301 Computing Ethics	C	1

Requirement	Minimum Grade	Credit Hours
CSE 302 Circuits for Computer Engineers	C	3
CSE 310 Data Structures and Algorithms	C	3
CSE 320 Design and Synthesis of Digital Hardware	C	3
CSE 325 Embedded Microprocessor Systems	C	3
CSE 330 Operating Systems	C	3
CSE 360 Introduction to Software Engineering	C	3
CSE 420 Computer Architecture I	C	3
CSE 423 Systems Capstone Project I	C	3
CSE 424 Systems Capstone Project II	C	3
CSE 434 Computer Networks		3
IEE 380 Probability and Statistics for Engineering Problem Solving (QTRS)	C	3
MAT 343 Applied Linear Algebra	C+	3

Computer Systems Engineering Technical Electives

Upper Division CSE Technical Electives	C	12
BME 494 Topic: Applied Computational Behavioral Science		
CPI 350 Evaluation of Informatics Systems		
CPI 411 Graphics for Games		
CSE 335 Principles of Mobile Application Development		
CSE 340 Principles of Programming Languages		
CSE 355 Introduction to Theoretical Computer Science		
CSE 365 Information Assurance		

Requirement	Minimum Grade	Credit Hours
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 Topic: 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)		
MAT 447 Cryptography I		
MAT 448 Cryptography II		
PHY 302 Mathematical Methods in Physics II		
PHY 333 Electronic Circuits and Measurements		

Requirement	Minimum Grade	Credit Hours
PHY 441 Statistical and Thermal Physics		
SER 416 Software Enterprise: Project and Process Management		
CSE 408 Multimedia Information Systems		
CSE 412 Database Management		
CSE 420 Computer Architecture I		
CSE 434 Computer Networks		
CSE 438 Embedded Systems Programming		
CSE 440 Compiler Construction I		
CSE 445 Distributed Software Development		
CSE 446 Software Integration and Engineering		
CSE 450 Design and Analysis of Algorithms		
CSE 460 Software Analysis and Design		
CSE 463 Introduction to Human Computer Interaction		
CSE 464 Software Quality Assurance and Testing		
CSE 466 Computer Systems Security		
CSE 467 Data and Information Security		
CSE 468 Computer Network Security		
CSE 469 Computer and Network Forensics		
CSE 470 Computer Graphics		
CSE 471 Introduction to Artificial Intelligence		
CSE 472 Social Media Mining		
CSE 474 Mobile Robotics		

Requirement	Minimum Grade	Credit Hours
CSE 475 Foundations of Machine Learning		
CSE 476 Introduction to Natural Language Processing		
CSE 477 Introduction to Computer-Aided Geometric Design		
CSE 478 Foundations of Data Visualization		
400-Level CSE Elective		

Computer Systems Engineering Major GPA

Check: Minimum 2.0 Major GPA

Computer Systems Engineering Interdisciplinary Requirements

Biology or Chemistry Courses		
BIO 181 General Biology I (SCIT)		4
BIO 182 General Biology II (SCIT)		
CHM 113 General Chemistry I (SCIT)		
CHM 114 General Chemistry for Engineers (SCIT)		
PHY 121 University Physics I: Mechanics (SCIT) **AND** PHY 122 University Physics Laboratory I (SCIT)	C	4
PHY 131 University Physics II: Electricity and Magnetism (SCIT) **AND** PHY 132 University Physics Laboratory II (SCIT)	C	4

Computer Systems Engineering Mathematics Lower Division

MAT 243 Discrete Mathematical Structures	C	3
MAT 265 Calculus for Engineers I (MATH)	C	3

MAT 266 Calculus for Engineers II (MATH)	C	3
MAT 267 Calculus for Engineers III (MATH)	C	3

ASU 101 or College-Specific First-Year Seminar

ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students.

ASU 101-CAI The ASU Experience	C	1

First-Year Composition

ENG 101 First-Year Composition **AND** **ENG 102 First-Year Composition** **OR** **ENG 105 Advanced First-Year Composition** **OR** **ENG 107 First-Year Composition** **AND** **ENG 108 First-Year Composition**	C	6

Notes

All baccalaureate degree students must fulfill university graduation requirements, including a minimum of 120 credit hours, with at least 45 credit hours in upper-division courses. https://catalog.asu.edu/undergraduatereq

All undergraduate students must complete General Studies requirements. https://catalog.asu.edu/ug_gsr

Mathematics Placement Assessment score determines placement in first mathematics course.

Students should work with their academic advisor, and consider course prerequisites, in order to complete all degree requirements in four years.

General Studies designations listed next to courses were valid for the 2025 - 2026 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.