

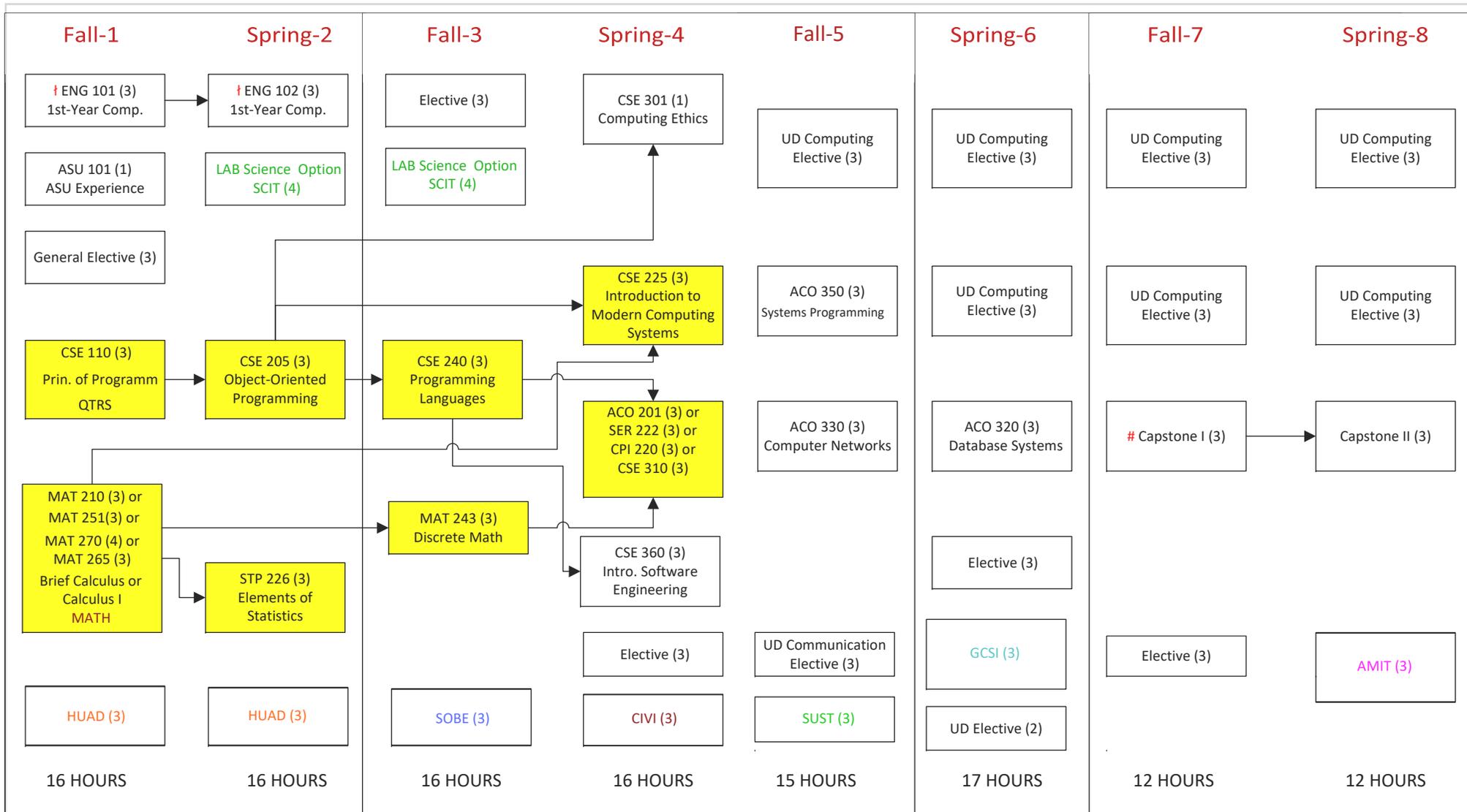
School of Computing & Augmented Intelligence

Computer Science, BA (ESCSEBA)

Updated: 2024-25 Catalog Year Requirements - General Studies **GOLD**

Name: _____

Student ID#: _____



NOTES: † International students may take ENG 107 and ENG 108. Students placing in to ENG 105 will replace ENG 101 with a recommended elective course

** See SCAI Advising Center or SCAI Website (<https://degrees.apps.asu.edu/bachelors/major/ASU00/ESCSEBA/pre-computer-science-ba>) for degree requirements and a list of technical/computing electives.

+ All Upper division XXX courses may require additional prerequisites

All pre-requisite coursework must be completed prior to taking Capstone courses

Shaded courses designate "Critical Requirements" and must be completed as described above to remain on-track. Off-track twice students will be required to change their major.

Minimum "C" grade is required in all major courses (see major map for details)

All ASU students must complete required university general studies as specified on the degree audit (DARs). HUAD, SOBE, AMIT, CIVI, GCSI, & SUST classes can be taken in any order.

Term 1

ENG 101: First-Year Composition

ASU 101: The ASU Experience

Elective (3 credits)

CSE 110: Principles of Programming with Java (QTRS)-Concepts of problem solving using Java, algorithm design, structured programming, fundamental algorithms and techniques, and computer systems concepts. Social and ethical responsibility.

MAT 210 or MAT 251 or MAT 265 or MAT 270 (MATH)

-Limits and continuity, differential calculus of functions of one variable, introduction to integration.

Humanities, Fine Arts & Design (HUAD)

Term 2

ENG 102: First-Year Composition

Lab Science Option 1 (SCIT)

CSE 205: Object-Oriented Programming & Data Structures-Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.

STP 226: Elements of Statistics-Basic concepts and methods of statistics, including descriptive statistics, significance tests, estimation, sampling, and correlation.

Humanities, Fine Arts & Design (HUAD)

Term 3

Elective (3 credits)

Lab Science Option 2 (SCIT)

CSE 240: Introduction to Programming Languages -Introduces the procedural (C/C++), applicative (LISP/Scheme), and declarative (Prolog) languages.

MAT 243: Discrete Mathematical Structures-Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and mathematical reasoning, including induction. Emphasizes connections to computer science.

Social & Behavioral Sciences (SOBE)

Term 4

CSE 301: Computing Ethics

CSE 225: Introduction to Modern computing Systems

ACO 201 or SER 222 or CPI 250 or CSE 310

CSE 360: Software Engineering

General Elective (3 credits)

Governance & Civic Engagement (CIVI)

Term 5

Upper Division Computing Elective (see major map or DARs for options)

ACO 350: Systems Programming - Introduces operating systems as resource managers, processes, threads, memory allocation, file systems, protection, system calls, application program interfaces.

ACO 330: Computer Networks-Network architecture and protocols, principles of network applications, socket programming, flow and congestion control, switching and routing, link-layer technologies, traffic capture and analysis, security.

Upper Division Communication Elective (see major map or DARs for options)

Global Sustainability (SUST)

Term 6

Upper Division Computing Elective (see major map or DARS for options)

Upper Division Computing Elective (see major map or DARS for options)

ACO 320: Database Systems - Entity-relationship and relational data models. Database design theory. Relational algebra, calculus and SQL query languages. Query optimization. XML fundamentals. Transactions, recovery and concurrency control.

IAS 300: Career Strategies and Personal Resilience - Analysis of sociological and economic factors of 21st-century work environments, integrated with a psychological understanding of resilience.

Global Communities, Societies, and Individuals (GCSI)

General Elective (1 credit)

Term 7

Upper Division Computing Elective (see major map or DARs for options)

Upper Division Computing Elective (see major map or DARs for options)

Computer Science Capstone I - First course in capstone sequence for computer science majors continuing the development process, technical skills, teamwork, and communication

General Elective (3 credits)

General Elective (1 credit)

Term 8

Upper Division Computing Elective (see major map or DARs for options)

Upper Division Computing Elective (see major map or DARs for options)

Computer Science Capstone Project II-Second course in capstone sequence for computer science majors continuing the development process, technical skills, teamwork, and communication.

American Institutions (AMIT)