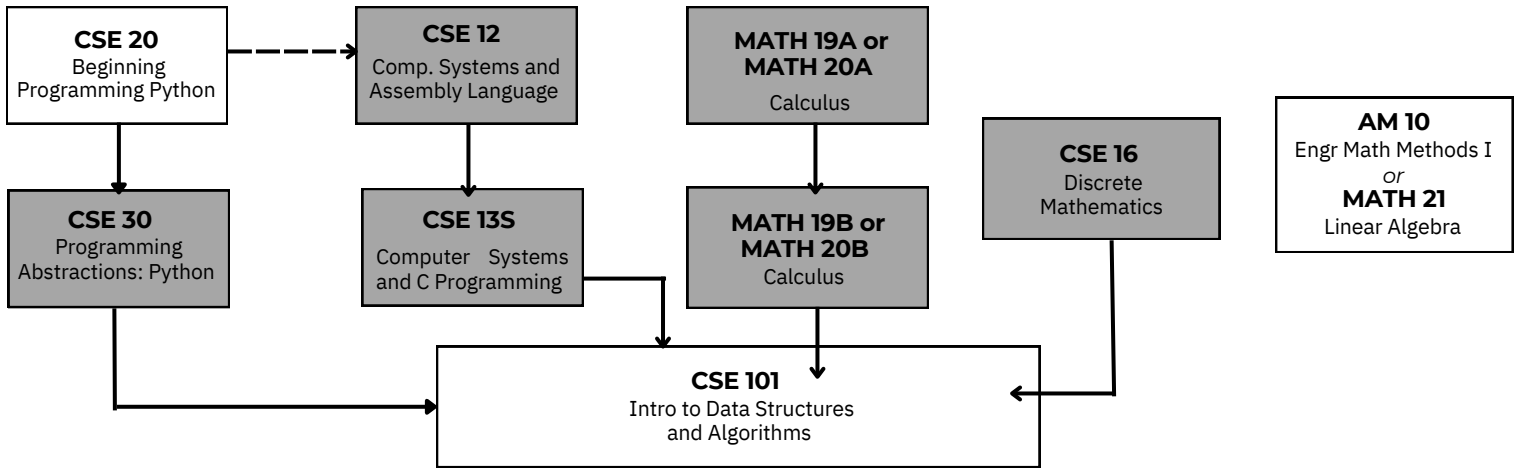
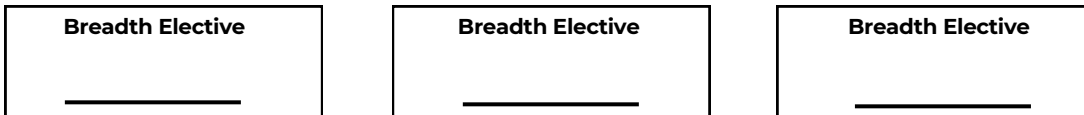


Computer Science B.A. Degree 2023-2024 Curriculum Chart



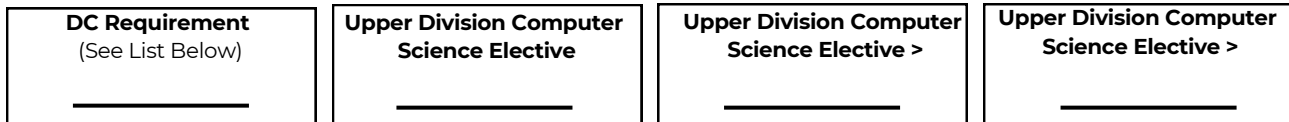
Students must complete **three** courses from this Breadth list.

- | | | |
|---|---|--|
| CSE 101M Mathematical Thinking for Computer Science
CSE 102 Introduction to Analysis of Algorithms
CSE 103 Computational Models
CSE 110A Compiler Design I
CSE 112 Comparative Programming Languages
CSE 114A Foundations of Programming Languages | CSE 120 Computer Architecture
CSE 130 Computer Systems Design
CSE 132 Computer Security
CSE 138 Distributed Systems
CSE 140 Artificial Intelligence | CSE 142 Machine Learning
CSE 143 Natural Language Processing
CSE 144 Applied Machine Learning
CSE 160 Computer Graphics
CSE 180 Database Systems I |
|---|---|--|



Students must complete **three** additional 5-credit (or more) upper division Computer Science and Engineering (CSE) elective courses selected from all 5-credit (or more) upper division CSE courses numbered between 100-189. At least 1 Upper Division Elective must satisfy the Comprehensive Requirement.

>Students may substitute **two** of these upper division Computer Science and Engineering electives with courses from the list on the back of the chart.



Disciplinary Communication

Students of every major must satisfy that major's upper-division Disciplinary Communication (DC) Requirement. The DC Requirement for the Computer Science B.A is satisfied by completing one of the following courses:

- CSE 115A** Introduction to Software Engineering
- CSE 185E/185S** Technical Writing for Computer Science and Engineering
- Ψ CSE 195** Senior Thesis

DC courses cannot be used to satisfy any of the Upper Division Electives.

Capstone Courses

Many Capstone course options require additional prerequisites not already required in major requirements. Advance planning is crucial.
The capstone course can also satisfy an Upper Division CSE Elective or Breadth Elective requirement.

- CSE 110B** Fundamentals of Compiler Design II
- CSE 115C** Software Design Project III
- CSE 115D** Software Design Project - Accelerated
- CSE 134** Embedded Operating Systems
- CSE 138** Distributed Systems
- CSE 140** Artificial Intelligence
- CSE 143** Introduction to Natural Language Processing
- CSE 144** Applied Machine Learning
- CSE 145** Introduction to Data Mining
- CSE 156/L** Network Programming / Lab
- CSE 157** Internet of Things
- CSE 160** Introduction to Computer Graphics / Lab
- CSE 161/L** Introduction to Data Visualization / Lab
- CSE 162/L** Advanced Computer Graphics and Animation / Lab
- CSE 163** Data Programming for Visualization
- CSE 168** Introduction to Augmented Reality and Virtual Reality
- CSE 181** Database Systems II
- CSE 183** Web Applications
- CSE 184** Data Wrangling and Web Scraping
- CSE 187** Full Stack Web Development II
- CMPM 172** Game Production Studio

Comprehensive Requirement - Students have two options to fulfill the Computer Science exit requirement:

1. Pass one of the Capstone Courses (which can also fulfill an elective requirement, see Capstone Courses list →)
2. Successfully complete a Senior Thesis.

Computer Science B.A. Degree 2023-2024 Curriculum Chart

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Upper Division Elective List

- **Any 5-credit upper division course offered by Baskin Engineering** except those numbered 191 through 194 and 196 through 199 and CSE courses numbered 185E, 185S, and 115A. (*AM, CPM, and STAT courses strongly recommended.*)
- **ARTG 118** Character Creation for Video Games
- **EART 124** Modeling Earth's Climate
- **EART 125** Statistics and Data Analysis in the Geosciences
- **EART 172/OCEA 172** Geophysical Fluid Dynamics
- **ECON 100M** Intermediate Microeconomics, Math Intensive
- **ECON 100N** Intermediate Macroeconomics, Math Intensive
- **ECON 101** Managerial Economics
- **ENVS 115A/L** Geographic Information Systems and Environmental Applications with Exercises
- **FILM 170A** Fundamentals of Digital Media Production
- **LING 112** Syntax I
- **LING 113** Syntax II
- **LING 118** Semantics III
- **LING 125** Foundations of Linguistic Theory
- **MATH 110** Introduction to Number Theory
- **MATH 115** Graph Theory
- **MATH 116** Combinatorics
- **MATH 117** Advanced Linear Algebra
- **MATH 118** Advanced Number Theory
- **MATH 134** Cryptography
- **MATH 145/L** Introductory Chaos Theory with Laboratory
- **MATH 148** Numerical Analysis
- **MATH 160** Mathematical Logic I
- **MATH 161** Mathematical Logic II
- **MUSC 123** Electronic Sound Synthesis
- **MUSC 124** Intermediate Electronic Sound Synthesis
- **MUSC 125** Advanced Electronic Sound Synthesis
- **PHYS 115** Computational Physics
- **PHYS 150/CSE 109** Quantum Computing

• **All students admitted to a Baskin Engineering major, or seeking admission to a major, must take all courses required for that major for a letter grade.**
 • Courses in which you receive a grade of C-, D+, D, or D- earn credit toward graduation, but cannot be used to satisfy a major requirement or a general education requirement, and cannot satisfy a prerequisite for another course.

• Shaded boxes represent foundation courses. Major qualification requirements for this major can be found at:

<https://undergrad.soe.ucsc.edu/major-qualification-requirements>

• Many graduate courses can also be used to satisfy electives; however, students will need instructor and department approval.

• The Baskin Engineering major declaration process requires an earlier start than the deadline on the UCSC Academic/Administrative calendar. Our deadlines and process can be found on:

<http://undergrad.soe.ucsc.edu/current-students/declare-your-major>