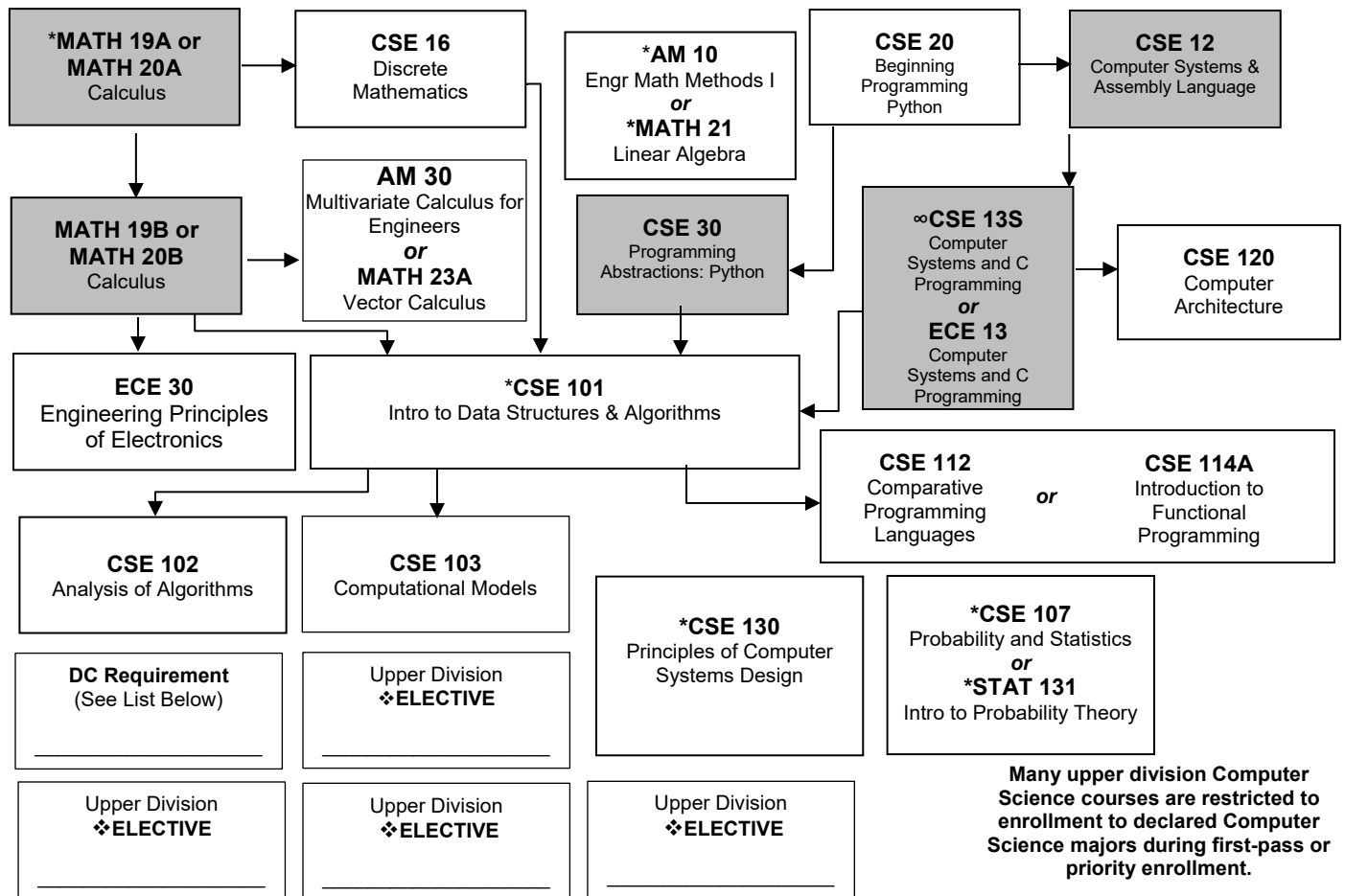


Computer Science B.S. Degree 2021-2022 Curriculum Chart



The capstone course can count toward 1 of the 4 required upper division electives.

Disciplinary Communication Requirement (DC)

Students of every major must satisfy that major's upper-division Disciplinary Communication (DC) Requirement. The DC Requirement for the Computer Science B.S. 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 4 Upper Division Electives with the exception of CSE 195.

Capstone Courses

Many Capstone course options require additional prerequisites not already required in major requirements. Advance planning is crucial.

- CSE 110B Fundamentals of Compiler Design II
- CSE 115C Software Design Project III
- CSE 115D Software Design Project - Accelerated
- CSE 121 Embedded System Design
- 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 156/L Network Programming / Lab
- CSE 157 Internet of Things
- CSE 160/L 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
- CMPM 172 Game Design Studio III
- ECE 118/L Introduction to Mechatronics / Lab

These courses can be used to satisfy Upper Division Electives.

❖ **Upper Division Electives:** 5 credit (or more than 5 credit) upper-division computer science or computer engineering (CSE) courses with a course number below 170, or between 180-189, or CSE 195, or courses from the Computational Media electives on the back of this chart. Up to two of these electives may be replaced by upper-division mathematics electives listed on the back.

CSE 115A, CSE 185S, or CSE 185E cannot be used to satisfy one of the four upper-division elective requirements.

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

1. Pass one of the Capstone Courses _____
2. Successfully complete a Senior Thesis.

Disciplinary Communication Requirement – Students have two options to fulfill the DC requirement:

1. Pass one of the Disciplinary Communication Courses _____
2. Successfully complete a Senior Thesis

* Course has additional prerequisites. Please consult UCSC General Catalog course descriptions.
∞ CSE 13S is recommended for students pursuing a Computer Science major

Ψ **CSE 195** can satisfy the DC requirement OR an Upper Division Elective, but NOT both.

Computer Science B.S. Degree 2021-2022 Curriculum Chart

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

<u>Mathematics Electives List</u>	<u>Computational Media Electives List</u>
<p>AM 114 Introduction to Dynamical Systems AM 147 Computational Methods and Applications 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 / Lab MATH 148 Numerical Analysis MATH 160 Mathematical Logic I MATH 161 Mathematical Logic II One of the following combinations: [PHYS 5A and PHYS 5B] OR [PHYS 5A and PHYS 5C] OR [PHYS 6A and PHYS 6B] OR [PHYS 6A and PHYS 6C]*** STAT 132 Classical and Bayesian Inference</p>	<p>CMPM 120 Game Development Experience CMPM 131 User Experience for Interactive Media CMPM 146 Game AI CMPM 163 Game Graphics and Real-Time Rendering CMPM 164/L Game Engines / Lab CMPM 171 Game Design Studio II CMPM 172 Game Design Studio III</p>

- **All courses being applied to requirements for the Computer Science major must be taken for a letter grade. Grades of P will not count toward major requirements.**
- 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 major qualification courses. The full major qualification requirements for this major can be found at:
<https://undergrad.soe.ucsc.edu/major-qualification>
- Many graduate courses can also be used to satisfy electives; however, students will need instructor and department approval.
- The School of Engineering has different major declaration deadlines than the UCSC Academic/Administrative calendar. Our deadlines and process can be found on: <http://undergrad.soe.ucsc.edu/declare-your-major>

*** Physics courses have co-requisite labs required for enrollment. These associated labs are not part of the Computer Science B.S. major requirements.

Student Name: _____

Staff Advisor Signature: _____