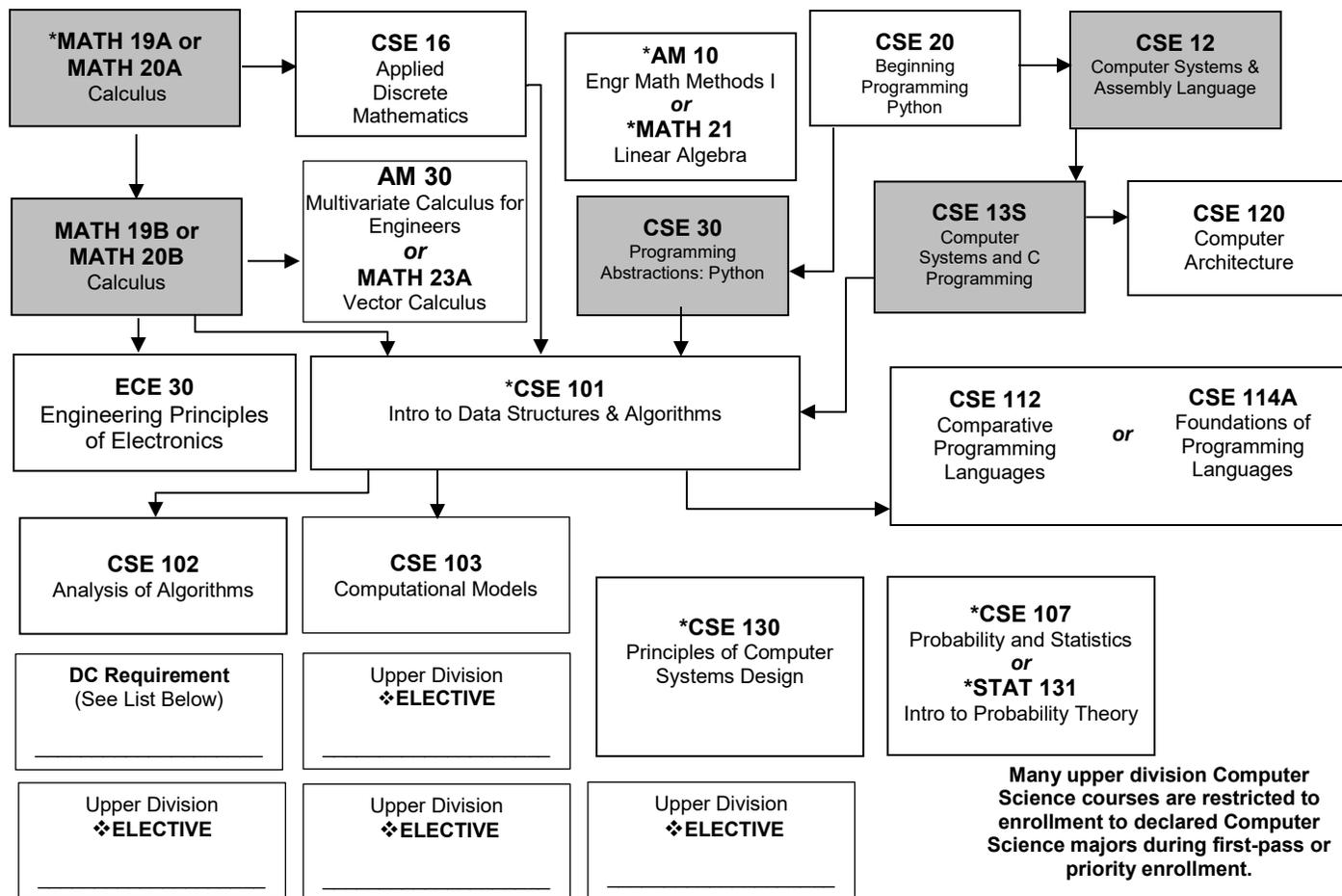


# Computer Science B.S. Degree 2022-2023 Curriculum Chart



**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 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 Design Studio III

**These courses can be used to satisfy Upper Division Electives.**

\* Course has additional prerequisites. Please consult UCSC General Catalog course descriptions.

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

❖ **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

# Computer Science B.S. Degree 2022-2023 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><b>AM 114</b> Introduction to Dynamical Systems  <b>AM 147</b> Computational Methods and Applications  <b>MATH 110</b> Introduction to Number Theory  <b>MATH 115</b> Graph Theory  <b>MATH 116</b> Combinatorics  <b>MATH 117</b> Advanced Linear Algebra  <b>MATH 118</b> Advanced Number Theory  <b>MATH 134</b> Cryptography  <b>MATH 145/L</b> Introductory Chaos Theory / Lab  <b>MATH 148</b> Numerical Analysis  <b>MATH 160</b> Mathematical Logic I  <b>MATH 161</b> Mathematical Logic II  <b>One of the following combinations:</b> [PHYS 5A and PHYS 5B] OR [PHYS 5A and PHYS 5C] OR [PHYS 6A and PHYS 6B] OR [PHYS 6A and PHYS 6C]***  <b>STAT 132</b> Classical and Bayesian Inference</p>	<p><b>CMPM 120</b> Game Development Experience  <b>CMPM 131</b> User Experience for Interactive Media  <b>CMPM 146</b> Game AI  <b>CMPM 163</b> Game Graphics and Real-Time Rendering  <b>CMPM 164/L</b> Game Engines / Lab  <b>CMPM 171</b> Game Design Studio II  <b>CMPM 172</b> 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-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>

\*\*\* 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: \_\_\_\_\_