Computer Science B.S. Degree
2017-2018 Curriculum Chart

CMPS 12A/L
Intro to Prog. (Accelerated)

CMPS 12B/M
Data Structures
**OR

**CMPS 13H/L
Intro St Prog. & Data Structures (Honors)

CMPS 5J
Intro to Prog: Java

CMPS 11
Intermediate Programming

CMPS 13L
Computer Systems and C Programming

CMPE 13/L
Intro to Prog. & Data Structures (Honors)

Students may take CMPS 13/L in lieu of another introductory programming class + data structures.

* MATH 19A or 20A
Calculus

MATH 19B or 20B
Calculus

MATH 23A
Multivariable Calculus

**AMS 10
Engr Math Methods I

* MATH 21
Linear Algebra

CMPE 13/L
Computer Systems and C Programming

CMPS 101
Abstract Data Types

CMPS 12B/M

CMPS 12A/L
Intro to Prog. (Accelerated)

CMPS 13H/L
Intro St Prog. & Data Structures (Honors)

CMPS 104B
Fundamentals of Compiler Design II

CMPS 117
Software Design Project II

CMPS 161/L
Introduction to Data Visualization

CMPS 162/L
Advanced Computer Graphics and Animation

CMPS 165
Data Programming for Visualization

CMPS 183
Web Applications

CMPS 184
Data Wrangling and Web Scraping

CMPPM 172
Game Design Studio III

** Most upper division Computer Science courses are restricted to enrollment by declared Computer Science majors during first-pass or priority enrollment. **

CMPS Upper Division Electives: 5 credit (or more than 5 credit) upper-division computer science (CMPS) courses with course number 190 or below, or CMPS 195

Additional Upper Division Electives: 5 credit (or more than 5 credit) upper-division computer science (CMPS) or computer engineering (CMPE) courses with course number 190 or below, or CMPS 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.

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.
## Computer Science B.S. Degree
### 2017-2018 Curriculum Chart

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### Notes:
- All students admitted to a School of 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 major qualification courses. The full major qualification requirements for this major can be found at: https://ua.soe.ucsc.edu/major-qualification
- Many graduate courses can also be used to satisfy electives; however, students will need instructor and department approval.
- Students may not receive credit for both AMS 131 and CMPE 107.
- The School of Engineering has different major declaration deadlines than the UCSC Academic/Administrative calendar. Our deadlines and process can be found on: http://ua.soe.ucsc.edu/declare

#### Mathematics Electives List
- AMS 114 Introduction to Dynamical Systems
- AMS 132 Classical and Bayesian Inference
- AMS 147 Computational Methods and Applications
- MATH 115 Graph Theory
- MATH 116 Combinatorics
- MATH 117 Advanced Linear Algebra
- MATH 134 Cryptography
- MATH 148 Numerical Analysis
- MATH 160 Mathematical Logic I
- MATH 161 Mathematical Logic II

#### Computational Media Electives List
- CMPM 120 Game Development Experience
- CMPM 131 User Experience for Interactive Media
- CMPM 146 Game AI
- CMPM 164/L Game Engines Lab
- CMPM 171 Game Design Studio II
- CMPM 172 Game Design Studio III

* Course has additional prerequisites. Please consult UCSC General Catalog course descriptions.
** In order for these courses to satisfy the DC requirement, the W section must be completed.
♦ Enrollment restricted to majors in Computer Engineering, Electrical Engineering, Bioengineering, Bioinformatics, Robotics Engineering, or Network and Digital Technology, or by permission of instructor.
Ω Only one course (Math 23A or AMS 10/Math 21) is required as a pre-requisite for CMPS 101 but both Math 23A and either AMS 10 or Math 21 must be taken to fulfill the major requirements.

**Student Name:**

**Staff Advisor Signature:**