1. Students must complete three courses from this breadth list:

   - CMPE 110 Computer Architecture
   - CMPS 102 Introduction to Analysis of Algorithms
   - CMPS 104A Compiler Design
   - CMPS 111 Operating Systems
   - CMPS 112 Comparative Programming Languages
   - CMPS 115 Software Methodology
   - CMPS 122 Computer Security
   - CMPS 140 Artificial Intelligence
   - CMPS 142 Machine Learning
   - CMPS 160/L Computer Graphics
   - CMPS 180/CMPS 180W Database Systems

2. Students must complete two additional 5-unit (or more) upper division Computer Science courses selected from all upper division CMPS courses except those numbers 191-194 and 196-199.

3. Students must complete two additional 5-unit (or more) upper division technical electives selected from the following:

   Any 5-credit upper division course offered by the BSOE except those numbered 191 through 194 and 196 through 199.
   Any 5-credit upper division course from the Division of Physical and Biological Sciences except those numbered 190 and above.

   - ART 118 Computer Art: Theories, Methods, and Practices
   - ART 120/121 Advanced Projects in Computer Art I/II
   - ECON 100M Intermediate Microeconomics, Math Intensive
   - ECON 100N Intermediate Macroeconomics, Math Intensive
   - ECON 101 Managerial Economics
   - ENVS 115A/L Geographic Information Systems
   - FDM 170A Fundamentals of Introduction to Digital Media Production
   - FDM 177 Digital Media Workshop: Computer as Medium
   - LING 112/113/114 Syntax I/II/III
   - LING 116/118 Semantics II/III
   - LING 125 Foundations of Linguistic Theory
   - MUS 123 Electronic Sound Synthesis
   - MUS 124 Intermediate Electronic Sound Synthesis
   - MUS 125 Advanced Electronic Sound Synthesis

   Disciplinary Communication

   The following courses also satisfy an upper division elective:
   - CMPS 115
   - CMPS 132 & 132W
   - CMPS 180 & 180W
   - CMPS 185
   - CMPS 195
   - CMPE 185 (see back of the chart)

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 ▲ on back for courses)
2. Successfully complete a Senior Thesis.
Computer Science B.A. Degree
2016-2017 Curriculum Chart

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<th>Term</th>
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**Capstone Courses**

- CMPS 104B
- CMPS 117
- CMPS 161/L
- CMPS 162/L
- CMPS 181

**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 foundation courses. Major qualification requirements for this major can be found at: [https://ua.soe.ucsc.edu/major-qualification](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.
- 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](http://ua.soe.ucsc.edu/declare)
- ♦ Course satisfies the Computer Science Comprehensive Requirement and an elective requirement.
- ● Course prerequisites.
- ♦ Check catalog/SOE course descriptions for additional prerequisites.
- ♦ Enrollment restricted to majors in Computer Engineering, Electrical Engineering, Bioengineering, Bioinformatics, Robotics Engineering, or Network and Digital Technology, or by permission of instructor.

Student Name:
Staff Advisor:
Faculty Advisor: