Computer Engineering B.S. Degree
2019-2020 Curriculum Chart

**Math Courses**
- **MATH 19A**
  - Calculus I
- **MATH 19B**
  - Calculus II
- **MATH 23A**
  - Vector Calculus
- **AM 30**
  - Multivariate Calculus for Engineers
- **ECE 103/L**
  - Signals & Systems

* Strongly recommended

**Core Courses**
- **CSE 16**
  - Discrete Math
- **AM 10**
  - Engr. Math Methods I
  - or
  - **MATH 21**
  - Linear Algebra
- **AM 20**
  - Engr. Math Methods II
- **CSE 107**
  - Probability & Statistics
- **CSE 20**
  - Beginning Programming in Python
- **CSE 30**
  - Programming Abstractions: Python
- **CSE 100/L**
  - Logic Design
- **CSE 185E #**
  - Technical Writing
- **CSE 12/L**
  - Computer Systems & Assembly Lang.
- **CSE 13E**
  - Embedded Systems & C Programming
  - or
  - **CSE 13S**
  - Computer Systems & C Programming
- **CSE 120**
  - Computer Architecture
- **CSE 101**
  - Algorithms & Abstract Data Types
- **CSE 121/L**
  - Microprocessor System Design
- **ECE 101/L**
  - Electronic Circuits

**Science Courses**
- **PHYS 5A/L**
  - Mechanics
- **PHYS 5B/M**
  - Waves & Optics
  - or
  - **ECE 9**
  - Statics, Dynamics, & Biomechanics
- **PHYS 5C/N**
  - Electricity & Magnetism

* ECE 9 is recommended for the Robotics & Control concentration

**Concentrations (choose one)**

**System Programming**
- **CSE 131**
  - or
  - **CSE 130**
- **CSE 111**
  - or
  - **CSE 115A**
  - or
  - **CSE 134**
- **CSE 150/L**
  - One of the following:
    - CSE 113
    - CSE 156/L
    - CSE 110A
  - **CSE 151/L or Elective***

**Robots & Control**
- Third course from above or any course from Robotics and Control Elective List on the UA website

**Computer Systems**
- **CSE 131**
  - or
  - **CSE 130**
- **CSE 125/L**
  - or
  - **CSE 122***
- **CSE 111**
  - or
  - **CSE 115A**
  - or
  - **CSE 134**
- **CSE 151/L or Elective***

**Networks**
- **CSE 150/L**
- **CSE 156/L**
- **CSE 131**
  - or
  - **CSE 130**
- **CSE 151/L or Elective***

**Digital Hardware**
- **CSE 125/L**
- **ECE 171/L**
  - or
  - **CSE 122***

  One of the following:
  - CSE 122 (if not satisfied above)***
  - CSE 220
  - ECE 171/L (if not satisfied above)
  - ECE 173/L**

  Elective*

**Capstone (choose one option)**
- **CSE 123A, 123B**
  - Eng. Design I & II
- **CSE129A, 129B & 129C**
  - Capstone Project I, II, & III
- **CSE 115A, 115B, & 115C**
  - Software Capstone Project I, II, & III
- **CSE 195**
  - Senior Thesis
- **ECE 118/L**
  - Intro to Mechatronics

$ ECE 118/L only allowed as Capstone course if it is not used as a concentration course

**Exit Requirements**
1. Portfolio
2. Exit Survey
3. Exit Interview
   See back for more info

https://undergrad.soe.ucsc.edu/  •  advising@soe.ucsc.edu  •  (831) 459-5840  •  07/19/2019
### Approved List of Upper Division Electives

Please refer to the Undergraduate Advising website for the list of approved electives.

**Upper Division Electives:** [https://undergrad.soe.ucsc.edu/curriculum-charts/ce-electives](https://undergrad.soe.ucsc.edu/curriculum-charts/ce-electives)

**Robotics and Control Electives:**

### Exit Requirements

1. **Portfolio**
   - [https://www.soe.ucsc.edu/departments/computer-science-and-engineering-css/computer-engineering/undergraduate/undergraduate](https://www.soe.ucsc.edu/departments/computer-science-and-engineering-css/computer-engineering/undergraduate/undergraduate)
2. **Exit Survey**
   - [https://undergrad.soe.ucsc.edu/exit-survey](https://undergrad.soe.ucsc.edu/exit-survey)
3. **Exit Interview**

### Notes:

- The School of Engineering has different major declaration deadlines than the UCSC Academic/Administrative calendar. Our deadlines and process can be found on: [https://undergrad.soe.ucsc.edu/declare-your-major](https://undergrad.soe.ucsc.edu/declare-your-major)
- 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.
- At most, only one elective upon prior approval may be substituted by an upper-division individual or field study (CSE/ECE 193 or 198). Approval is determined by the department via Course Substitution Petition.

### Student Name:

Staff Advisor:

Faculty Advisor:

☐ I have discussed the BS/MS program with my advisor.