**Students must meet with their advisor prior to registering for courses. This roadmap is designed for general planning ONLY! Roadmaps for more than 5 years plan may vary please consult with your department.**

**Minimum Units required for Bachelors = 128**
**Minimum Units required for Masters = 30**

**Bold:** must take courses

**& pass before applying**

**Green:** Undergraduate courses

**Orange:** Graduate Courses

**SF State Scholars**

*Tentative* Computer Engineering

Roadmap

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**Freshman**

- **Fall**
  - CHEM 180 or 115
  - ENG 114
  - ENGR 100 + 121 + 122
  - MATH 226
  - Area A
- **Spring**
  - ENGR 213
  - MATH 227
  - PHYS 220 + 222
  - Area D
  - Area E
  - 17-19 Units (17-19 total)  (34-36 total)

**Sophomore**

- **Fall**
  - CSC 210
  - MATH 228
  - PHYS 230/232
  - Area B2
  - Area C
  - Area D
  - 17 Units (51-53 total)
  - 16 Units (67-69 total)
- **Spring**
  - MATH 245
  - ENGR 205 + 206
  - CS 220
  - CS 230

**Junior**

- **Fall**
  - ENGR 300 + 301
  - ENGR 305
  - ENGR 353
  - ENGR 356 + 357
  - Area C
  - Area D
  - 17 Units (84-86 total)
  - 16 Units (100-102 total)
  - 9 Units (109-111 total)
- **Spring**
  - ENGR 451
  - ENGR 476
  - ENGR 478
  - CSC 340
  - Area C
  - Area D
  - 17 Units (91-93 total)
- **Summer**
  - UD-C
  - UD-D
  - Area C
  - 9 Units (Area C)

**Senior**

- **Fall**
  - CS 413
  - ENGR 697 GW
  - ENGR 456
  - ENGR 378
  - ENGR 696
  - UD-Elective
  - UD-Elective
  - Area C
  - 16-17 Units (125-128 total)
- **Spring**
  - ENGR 844
  - Graduate Elective
  - Graduate Elective
  - Area C
  - 9 Units (151-154 total)
  - 9 Units (160-163 total)

**Graduate**

- **Fall**
  - ENGR 800
  - ENGR 897
  - ENGR 898
  - Graduate Elective
  - Graduate Elective
  - Graduate Elective
  - Area C
  - 16-17 Units (125-128 total)
  - 17 Units (142-145 total)
- **Spring**
  - ENGR 801
  - ENGR 897
  - ENGR 898
  - Graduate Elective
  - Graduate Elective
  - Graduate Elective
  - Area C
  - 9 Units (151-154 total)
  - 9 Units (160-163 total)

**Apply to SF Scholars**

- 81 Units (GE Requirements)
- 3.0 GPA

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Computer Engineering Prerequisite Flow Chart

First Semester
- CHEM 180: Chem. for Energy & Environment
- MATH 226: Calculus I

Second Semester
- PHYS 220/222: Physics I and Phys I Laboratory
- MATH 227: Calculus II
- ENGR 213: Introduction to C Programming
- ENGR 212: Introduction to UML Design for Engineers

Third Semester
- PHYS 230/232: Physics II and Phys II Laboratory
- MATH 228: Calculus III
- ENGR 245: Differential Equations and Linear Algebra

Fourth Semester
- ENGR 205: Electric Circuits
- ENGR 206: Circuits, Sensors & Instrumentation Lab

Fifth Semester
- ENGR 352: Microelectronic Principles
- ENGR 305: Linear Systems Analysis
- ENGR 300: Engineering Circuit Analysis

Sixth Semester
- ENGR 301: Microelectronics Laboratory
- ENGR 470: Communication Systems Engineering
- ENGR 451: Digital Signal Processing
- ENGR 456: Digital Design Laboratory

Seventh Semester
- ENGR 696: Senior Design Project I
- ENGR 697: Senior Design Project II
- Engineering Electives

Eighth Semester
- Engineering Electives
- Engineering Electives