### Mathematics
- MATH 19A or MATH 19B
- MATH 3 or Math placement

### Chemistry
- CHEM 1A
- CHEM 1B/M
- CHEM 1C/N
- CHEM 3A General Chemistry
- CHEM 3B General Chemistry
- CHEM 3C/CL General Chemistry

### Biology, Organic Chemistry, and Biochemistry
- CHEM 1B and CHEM 1C, or CHEM 4A
- BIOC 105
- BIOC 20A

### Bioinformatics and Bioethics
- STAT 131 and permission

### Laboratory Courses
- CHEM 1M or 3BL or 4BL
- BME 21L Intro. to Basic Laboratory Techniques
- BME 21L Foundations of Design in Molecular Biology I
- BME 22L Foundations of Design in Molecular Biology II
- PHYS 5A/L Introduction to Physics I
- PHYS 5B/M Introduction to Physics II

### Physics
- MATH 19A, corequisite of Phys 5L, Math 19B
- PHYS 5A/L Introduction to Physics I
- PHYS 5B/M Introduction to Physics II

### Modeling & Design Sequence
- BME 177 Engineering Stem Cells
- BME 128 Protein Engineering
- BME 188A(2 units) Synthetic Biology – Mentored Research A
- BME 188B(2 units) Synthetic Biology – Mentored Research B
- BME 188C Synthetic Biology – Mentored Research C

### Elective: One of the following (course used as an Elective cannot be used to satisfy other major requirements)
- AM 147, BIOC 115*, METX 100, METX 140, BIOC 100C, BME 118, BME 122H, BME 128, BME 130, BME 132, BME 140, BME 175, BME 177, BME 177L, BME 178, ECE 104, or any 5-credit biomolecular engineering graduate course

### Biomolecular Capstone
- Students must complete one of the following:
  - BME 195F
  - BME 195 (5 units)
  - BME 185

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http://undergrad.soe.ucsc.edu  •  bsoeadvising@ucsc.edu  •  (831) 459-5840  •  8/18/2023
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**Legend**

Ω Students with no prior programming experience are advised to take CSE 20 prior to BME 160.

# The Bioinformatics capstone is programming heavy. Students interested in this capstone are advised to take additional programming classes.

α The thesis option consists of 15 credits of Independent Study (BME 198), Field Study (BME 193), or Senior Thesis Research (BME 195) in Biomolecular Engineering. Students pursuing the senior thesis option must write a two-page thesis proposal and seek approval of their project from the undergraduate director in the quarter preceding the independent study courses, typically spring quarter of the third year. Students spend three or more quarters working on their thesis projects. BME 123T is no longer required and students should plan on 15 units of BME 195 split over 3 quarters.

^ Students may petition to substitute Math 21 for AM 10, and Math 24 for AM 20, if they can show MATLAB proficiency at the level of students in the AM classes they are replacing. Matlab Training: [https://its.ucsc.edu/software/matlab.html](https://its.ucsc.edu/software/matlab.html)

Double majors with other biology-related majors are permitted for the bioinformatics concentration, but not for the biomolecular engineering concentration. Cannot be combined with a Bioinformatics minor.

**Exit Requirements**

Students are required to submit a portfolio, exit survey, and attend an exit interview. The portfolios must be turned in by the last day of the quarter of graduation, and will be reviewed quarterly by the undergraduate director. Exit interviews are scheduled during the last week of the quarter by Baskin Engineering advising office, generally as small group interviews. Additional information can be found in the program catalog statement.

1. Portfolio
2. Exit Survey
3. Exit Interview

Student Name: