Math & Statistics
- MATH 3 or math placement of 400 or higher
  MATH 19A
  Calculus I [F/W/Sp/Su]
- MATH 19A or MATH 20A
  MATH 19B
  Calculus II [F/W/Sp/Su]
- MATH 3 or math placement of 400 or higher
  AM 10
  Mathematical Methods for Engineers I [F/W/Sp]
- MATH 19A
  CSE 16
  Discrete Math [F/W/Sp]
- MATH 19B or MATH 20B
  STAT 131
  Intro to Probability Theory [F/W/Sp/Su]
- STAT 131
  STAT 132
  Classical and Bayesian Inference [W/Sp]
  OR
  STAT 131
  STAT 206
  Applied Bayesian Statistics [W]

Chemistry & Biochemistry
- MATH 3 or AM 3 or math placement of 300 or higher
  CHEM 1A
  General Chemistry [F/W/Sp/Su]
- CHEM 1/B/M
  General Chemistry/Lab [F/W/Sp/Su]
- CHEM 1A
  CHEM 1C/N
  General Chemistry/Lab [F/W/Sp/Su]
- CHEM 1B and 1C
  CHEM 8A
  Organic Chemistry [F/W/Sp/Su]
- CHEM 8B and BIOL 20A
  BIOC 100A
  Biochemistry and Molecular Biology [F]

Biology
- BIOL 20A
  BIOI 20A
  Cell and Molecular Biology [F/W/Sp/Su]
- BIOL 20A
  BME 105
  (Strongly Recommended)
  Genetics in the Genomics Era [Sp]
  OR
  • BIOL 20A and BIOE 20B
  • BME 105
  • Genetics [F/W/Sp/Su]

Humanities
- BME 80G
- ELWR and BME 20A
  BME 185
  Technical Writing for Biomolecular Engineers [F/Sp]
  OR
  • ELWR and CSE 12 or CSE 15 or CSE 30 or MATH 160
  • CSE 185E
  (Recommended)
  Technical Writing for Computer Engineers [F/W/Sp]

Modeling & Design
Choose one of the following sequences
- Math 19B and AM 10
  AM 20
  Mathematical Methods for Engineers II [W/Sp]
- STAT 131 and AM 10
  AM 115
  & Stochastic Modeling in Biology [Sp]
  OR
  • Math 19B or MATH 20B; and AM 10
  • AM 30
  Multivariate Calculus for Engineers [F/Sp]
  • CSE 101 and AM 30 and Stat 131
  • CSE 142
  & Machine Learning [F/W/Sp]

Programming
- BIOL 20A
  BME 160 (6 units)
  Research Programming in the Life Sciences [W/Sp]
- BME 160 or BME 205
  BME 163 (3 units)
  Applied Visualization and Analysis of Scientific Data [Sp]
- CSE 20 or BME 160; and Math 3 or Math 19A
  CSE 30 (7 units)
  Programming Abstractions: Python [F/W/Sp]
- CSE 12 or BME 160
  CSE 135 (7 units)
  Computer Systems and C Programming [F/W/Sp]
- BME 160 and 13S and CSE 16 and CSE 30 and Math 19B
  CSE 101
  Introduction to Data Structures and Algorithms [F/W/Sp]
- CSE 13S or CSE 15/L
  CSE 182
  Introduction to Database Management Systems [Sp]

Bioinformatics & Elective
- BME 105 or BIOL 105 or BIOL 100A or declared BINF major
  BME 110
  Computational Biology Tools [F/W/Sp]
- BME 205
  BME 230A
  Introduction to Computational Genomics and Systems Biology [F]
  OR
  Bioinformatics Capstone
  • BME 160, and STAT 131 and previous or concurrent enrollment in BIOC 100A
  • BME 205
  • Bioinformatics Models and Algorithms [F]
  OR
  • BME 205
  • BME 230A
  • Introduction to Computational Genomics and Systems Biology [W]

Elective
Course used as an Elective cannot be used to satisfy other major requirements
- AM 147, BME 122H, BME 128, BME 128L, BME 130, BME 132,
  BME 140, BME 175, BME 177, BME 178,
  BIOC 100B, CSE 142, CSE 144, METX 119, METX 140 or 5-unit BME grad course

Exit Requirements
Requirements must be completed by the end of a student’s final quarter.
1. Portfolio
2. Exit Survey
3. Exit Interview

http://undergrad.soe.ucsc.edu • bsoeadvising@ucsc.edu • (831) 459-5840 • 10/1/2021
### 2021 – 2022 Biomolecular Engineering and Bioinformatics: Bioinformatics

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**Legend**

- **•** Denotes Prerequisite
- **+** Students may take CSE 180 in place of CSE 182; however, BMEB: Bioinformatics students do not have registration priority
- **Ω** Students with no prior programming experience are advised to take CSE 20 prior to BME 160

**Student name:**

**Staff advisor signature:**