

# 2022 – 2023 Biomolecular Engineering and Bioinformatics: Bioinformatics

### 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, prior programming recommended  
**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 and permission from instructor  
**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 1B/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]
- CHEM 8A  
**CHEM 8B**  
Organic Chemistry [W/Sp/Su]
- CHEM 8B and BIOL 20A  
**BIOC 100A**  
Biochemistry and Molecular Biology [F]

### Biology

- CHEM 1A  
**BIOL 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  
**BIOL 105**  
Genetics [F/W/Sp/Su]

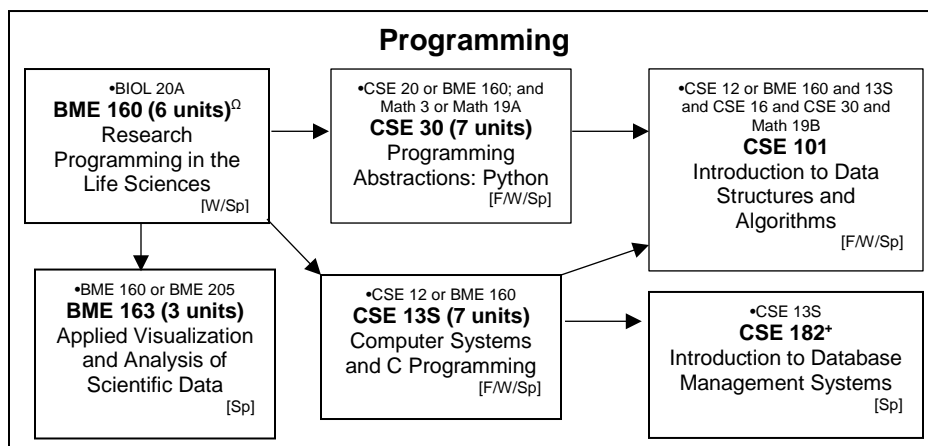
### Humanities

- BME 80G**  
Bioethics in the 21<sup>st</sup> Century: Science, Business, and Society [Sp]
- ELWR and BIOL 20A  
**BME 185**  
Technical Writing for Biomolecular Engineers [F]
- OR  
•ELWR and CSE 12 or CSE 15 or CSE 30 or BME 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 20  
**AM 115**  
Stochastic Modeling in Biology [Sp]
- 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/Sp]
- Math 19B and AM 10  
**AM 30**  
Multivariate Calculus for Engineers [F/Sp]
- &
- CSE 101  
**CSE 144**  
Applied Machine Learning [F/W/Sp]



### Bioinformatics & Elective

- BME 105 or BIOL 105 or BIOC 100A or declared BINF major  
**BME 110**  
Computational Biology Tools [F/W/Sp]
- 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

### Bioinformatics Capstone

- BME 160, and STAT 131 and previous or concurrent enrollment in BIOC 100A  
**BME 205**  
Bioinformatics Models and Algorithms [F]
- BME 205  
**BME 230A**  
Introduction to Computational Genomics and Systems Biology [W]

### Exit Requirements

Requirements must be completed by the end of a student's final quarter.

- Portfolio
- Exit Survey
- Exit Interview

## 2022 – 2023 Biomolecular Engineering and Bioinformatics: Bioinformatics

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

### 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: