Bioengineering B.S. Degree: Biomolecular  
2016-2017 Curriculum Chart

### Math & Statistics
- **MATH 3 or AMS 3 or math placement of 400 or higher**
  - **MATH 19A**  
    - Calculus  
      - [F / W / Sp]  
  - **MATH 19B or 20A**  
    - Calculus  
      - [F / W / Sp]  
  - **MATH 11B or MATH 19B or 20B or AMS 116**  
    - AMS 131  
      - Intro to Probability Theory  
      - [F / Sp]  
  - **AMS 131 or CMPE 107**  
    - AMS 132  
      - Statistical Inference  
      - [W]  

### Programming
- **MATH 3 or 11A or 19A or AMS 3 or AMS/Scien 11A or math placement of 400 or higher**  
  - **CMPS 12A/L**  
    - [Ω]  
      - Introduction to Programming  
      - [F / W]  
  - **Biol 100, 105, BioC 100A, or CHEM 103**  
    - BME 110  
      - Computational Biology Tools  
      - [F / W]  
  - **Biol 20A or 21A**  
    - BME 160/L  
      - Research Programming  
      - [F / Sp]  

*Students may choose to take CMPS 12F or CMPS 11 OR CMPS 12/L or 13/L in place of CMPS 12A/L.*

### Chemistry
- **Previous or concurrent enrollment in MATH 3 or equiv. or math placement of 300 or higher**  
  - **CHEM 1A**  
    - General Chemistry  
    - [F / W / Sp]  
  - **CheM 1B/1M**  
    - General Chemistry  
    - [F / W / Sp]  
  - **CHEM 1C/N**  
    - Organic Chemistry  
    - [F / W / Sp]  

### Physics & Electronics
- **Coreq: MATH 19A or 20A**  
  - **PHYS 5A/L**  
    - Intro to Physics I  
    - [F / W]  
  - **MATH 11B or 20B and Phys 5A/L**  
    - PHYS 5C/N  
      - Intro to Physics III  
      - [Sp]  
  - **MATH 19A**  
    - BME 51A  
      - Applied Electronics I  
      - [F / W]  
  - **MATH 19A**  
    - BME 51B  
      - Applied Electronics II  
      - [Sp]  

*Students may choose to take the Physics 6 series in place of the Physics 5 series. (But the 5 series is recommended.)*

### Biochemistry
- **CHEM 10A or CHEM 8A**  
  - **CHEM 88/M**  
    - Organic Chemistry  
    - [W / Sp]  
  - **CHEM 10B or 8L**  
    - BIOC 100A  
      - Biochemistry & Molecular Biology  
      - [F]  
  - **CHEM 10B or 8L**  
    - BIOL 100  
      - Biochemistry Laboratory  
      - [W / Sp]  

### Design Project
- **Biol 20A & 20B, and Biol 100 or BioC 100A, 51A**  
  - **BME 129A**  
    - Project Design I  
    - [Sp]  
  - **MATH 11B or 20B and Phys 5A/L**  
    - PHYS 5C/N  
      - Intro to Physics III  
      - [Sp]  
  - **MATH 19A**  
    - BME 51A  
      - Applied Electronics I  
      - [F / W]  
  - **MATH 19A**  
    - BME 51B  
      - Applied Electronics II  
      - [Sp]  

*Students may also choose to take CMPE or EE 129A, 129B or 129C as their design project.*

### Biology
- **CHEM 1A**  
  - **Biol 20A**  
    - **Biol 20B**  
      - Development & Physiology  
      - [F / W / Sp]  
  - **Biol 20A**  
    - **Biol 20B**  
      - Cell & Molecular Biology  
      - [F / W / Sp]  
  - **AM 5**  
    - **AM 20A**  
      - Biochemistry & Molecular Biology  
      - [F / W / Sp]  
  - **AM 131**  
    - **AM 132**  
      - Electives:  
      - [F / W / Sp]  

*Students may choose to take the next course in Molecular Biology, or CHEM 8A or 17A as their design project.*

### Elective
- **BME 185**  
  - **BME 188A**  
    - Synthetic Biology – Mentored Research A  
    - [SU]  
  - **BME 188B**  
    - Synthetic Biology – Mentored Research B  
    - [SU]  

### General Notes:
- Denotes pre-requisites and co-requisites.
- 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.
- The School of Engineering has different major declaration deadlines than the UCSC Academic/Administrative calendar. Our deadlines and process can be found on: [http://ua.soe.ucsc.edu/declare](http://ua.soe.ucsc.edu/declare)
- Pre-req for BME 188A is BME 180 and perm. of instructor; pre-req for BME 188B is BME 188A and perm. of instructor.
- Information about the prerequisites and scheduling of courses can change without notice; please check your plan each quarter and adjust for any changes.
- Pre-req for BME 188A is BME 180 and perm. of instructor; pre-req for BME 188B is BME 188A and perm. of instructor.
- Information about the prerequisites and scheduling of courses can change without notice; please check your plan each quarter and adjust for any changes.

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Bioengineering B.S. Degree: Biomolecular  
2016-2017 Curriculum Chart

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Bioengineering Electives Approval Form

Elective 1: ___________________________________
Elective 2: ___________________________________
Elective 3: ___________________________________
Elective 4: ___________________________________

Explanation for choice of electives:
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________

Student Name: 
Staff Advisor: 
Faculty Advisor: