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 19A or 20A
MATH 19B
Calculus
[F / W / Sp]

●MATH 11B or MATH 19B or 20B or AMS 11B
AMS 131
Intro to Probability Theory
[F / Sp]

●AMS 131 or CMPE 107
AMS 132
Statistical Inference
[W]

Chemistry

● previous or concurrent enrollment in MATH 3 or equiv. or math placement of 300 or higher
CHEM 1A
General Chemistry
[F / W / Sp]

●Strong high school level chemistry is recommended
CHEM 1B/M
General Chemistry
[F / W / Sp]

●CHEM 1A
CHEM 1C/N
General Chemistry
[F / W / Sp]

●CHEM 1B, 1C
CHEM 8A/L
Organic Chemistry
[F / W]

Biochemistry

OR

●CHEM 108A or CHEM 8A
CHEM 8B/M
Organic Chemistry
[W / Sp]

●CHEM 108B or 8B, BIOL 20A
BIOC 100A
Biochemistry & Molecular Biology
[F]

●BIOC 100A
BIOC 100B
Biochemistry & Molecular Biology
[W]

●Coreq: BIOL 100, 101 or BIOC 100A
BIOL 101L
Biochemistry Laboratory
[W / Sp]

●BIOL 20A, BIOE 20B, CHEM 108A or 112A
BIOL 100
Biochemistry
[F / W]

●BIOL 100 OR 101 or BIOC 100A
BIOL 101/L
Molecular Biology & Biochemistry Lab
[W / Sp]

Biochemistry Lab Elective*
_____

***Biochemistry Lab Electives:**
BIOL 110L: Cell Biology Lab
BIOL 115L: Eukaryotic Molecular Bio Lab
BIOL 120L: Development Lab

Biology

BME 5
Introduction to Biotechnology
[F / W / Sp]

●CHEM 1A
BIOL 20A
Cell & Molecular Biology
[F / W / Sp]

●BIOL 20A
BIOE 20B
Development & Physiology
[F / W / Sp]

●BIOL 20A, BIOE 20B
BIOL 105
Genetics
[F / W / Sp]

Biology Elective*
_____

***Biology Electives:**
BIOL 110: Cell Biology
BIOL 115: Eukaryotic Molecular Biology
METX 119: Microbiology

Programming

●MATH 3 or 11A or 19A or AMS 3 or AMS/Econ 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 5J & CMPS 11 OR CMPE 12/L & 13/L in place of CMPS 12A/L

Physics & Electronics

●Coreq: MATH 19A or 20A
PHYS 5A/L*
Intro to Physics I
[F / W]

●MATH 19B or 20B and Phys 5A/L
PHYS 5C/N*
Intro to Physics III
[Sp]

●MATH 19A
BME 51A
Applied Electronics I
[W]

●BME 51A
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).

Design Project   OR   Senior Thesis

●Biol 20A & 20B, and Biol 100 or BIOC 100A; 51A recommended
BME 129A
Project Design I
[Sp]

●BME 129A or 150
BME 129B
Project Design II
[F]

●BME 129A & BME 129B
BME 129C
Project Design III
[W]

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

BME 195
Senior Thesis

BME 195
Senior Thesis

BME 195
Senior Thesis

●BME 185 or CMPE 185 and concurrent enrollment in BME/CE/EE 193, 195 or 198
BME 123T
Senior Thesis Presentation
[W]

OR

IGEM Project

●co-req BME or CMPE 185
BME 180
Professional Practice in Bioengineering
(2 Units)
[Sp]

BME 188A♣
Synthetic Biology – Mentored Research A
[SU]

BME 188B♣
Synthetic Biology – Mentored Research B
[SU]

Elective

Bioengineering Design Elective*
_____

***Bioengineering Design Electives:**
BME 128: Protein Engineering
BME 140: Bioinstrumentation
BME 177: Engineering Stem Cells

Humanities

BME 80G
Bioethics in the 21st Century
[F]

●CMPS 12B or CMPE 12 or BME 160
CMPE 185
Technical Writing
[F / W / Sp]

OR

●Previous or Concurrent Enrollment in BIOL 101L or BIOL 100K or BME 150L
BME 185
Technical Writing Bioengineers
[W]

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**
- Ω CMPS 5P Intro. to Prog. in python is recommended for students who have never programmed
- ♣ 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.

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

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Bioengineering Electives Approval Form

Elective 1: _____

Elective 2: _____

Elective 3: _____

Elective 4: _____

Explanation for choice of electives:

_____

_____

_____

_____

Student Name:

Staff Advisor:

Faculty Advisor: