

**BIOLOGY BS Requirements (2021-22)**

Course offerings are subject to change.

**Lower Division Courses**

|               |  |    |  |    |  |
|---------------|--|----|--|----|--|
| Calculus:     | <input type="checkbox"/> MATH 11A (FWS) or MATH 19A (FWS)  | &  | <input type="checkbox"/> MATH 11B (FWS) or MATH 19B (FWS)  |    |  |
| General Chem: | <input type="checkbox"/> CHEM 1A: General Chemistry (FWS)  | &  | <input type="checkbox"/> CHEM 1B: General Chemistry (FWS)  | &  | <input type="checkbox"/> CHEM 1C: General Chemistry & (FWS)<br><input type="checkbox"/> CHEM 1N: General Chem Lab (FWS)                  |
| Biology:      | <input type="checkbox"/> BIOL 20A: Cell and Molecular Bio (FWS)  | &  | <input type="checkbox"/> BIOE 20B: Development and Physiology (FWS)  | &  | <input type="checkbox"/> BIOE 20C: Ecology & Evolution (FWS) & <input type="checkbox"/> BIOL 20L: Experimental Bio Lab (FWS)             |
| Organic Chem: | <input type="checkbox"/> CHEM 8A: Organic Chemistry (FW)<br><input type="checkbox"/> CHEM 8L: Organic Chemistry Lab (FW)               | &  | <input type="checkbox"/> CHEM 8B: Organic Chemistry (WS)   |    | <input type="checkbox"/> BIOL 102L: Toxic RNA Lab I (F)<br>OR<br><input type="checkbox"/> BIOL 107L: Synthetic Gene Regulation Lab I (F) |
| Statistics:   | <input type="checkbox"/> STAT 5: Statistics (FWS)  | OR | <input type="checkbox"/> STAT 7: Stats for the Biological, Environmental, and Health Sciences & (FWS)<br><input type="checkbox"/> STAT 7L: Stats Lab (FWS) |    |  |
| Physics:      | <input type="checkbox"/> PHYS 6A: Introductory Physics I & (FWS)<br><input type="checkbox"/> PHYS 6L: Introductory Physics 1 Lab (FWS) | &  | <input type="checkbox"/> PHYS 6B: Introductory Physics II (WS)   | OR | <input type="checkbox"/> PHYS 6C: Introductory Physics III (FS)  |

After passing the above qualification courses shaded green with a C or better, you can submit a Petition to Declare. All qualification courses must be completed by the end of the 5th quarter and students must petition to declare by the 6th quarter deadline.

Declared

**Upper Division Courses**

Complete the major with the following:

**CORE COURSES:**

|  |    |  |    |
|--|----|--|----|
| <input type="checkbox"/> BIOL 105: Genetics (FWS)                    |    |  |    |
| <input type="checkbox"/> BIOL 100: Biochemistry (WS)                 | &  | <input type="checkbox"/> BIOL 101: Molecular Biology (FS)                |    |
| OR   |    |  |    |
| <input type="checkbox"/> BIOC 100A: Biochemistry & Molecular Bio (F) | &  | <input type="checkbox"/> BIOC 100B: Biochemistry & MB (W)                | &  |
|  |    | <input type="checkbox"/> BIOC 100C: Biochemistry & MB (S)                |    |
| <input type="checkbox"/> BIOL 101L: Molecular Biology Lab (FWS)      | OR | <input type="checkbox"/> BIOL 102L: Toxic RNA Lab II (W)                 | OR |
| <input type="checkbox"/> BIOE 107: Ecology (FWS)                     |    | <input type="checkbox"/> BIOL 107L: Synthetic Gene Regulation Lab II (W) |    |
| <input type="checkbox"/> BIOE 109: Evolution (FWS)                   |    |  |    |
| <input type="checkbox"/> BIOL 110: Cell Biology (FWS)                |    |  |    |

**ELECTIVES: 3 UPPER DIVISION ELECTIVES (classes shaded below count towards the elective and DC requirements)**

- BIOC 100C: Biochemistry
- BIOE 108: Marine Ecology
- BIOE 112/L: Ornithology/Lab
- BIOE 114/L: Herpetology/Lab
- BIOE 117/L: Systematic Botany/Lab
- BIOE 120/L: Marine Botany/Lab
- BIOE 122/L: Invertebrate Zoology/Lab
- BIOE 124/L: Mammalogy/Lab
- BIOE 127/L: Ichthyology/Lab
- BIOE 129/L: Marine Mammals/Lab
- BIOE 131/L: Animal Physiology (lab optional)
- BIOE 133/L: Exercise Physiology/Lab
- BIOE 134/L: Comparative Vertebrate Anatomy/Lab
- BIOE 135/L: Plant Physiology/Lab
- BIOE 137/L: Molecular Ecology/Lab (lab optional)\*
- BIOE 139: Mathematical Modeling and Data Science In Ecology and Evolution
- BIOE 140: Behavioral Ecology
- BIOE 145: Plant Ecology
- BIOE 147: Community Ecology
- BIOE 149: Disease Ecology
- BIOE 155: Freshwater Ecology
- BIOE 161: Kelp Forest Ecology
- BIOE 163/L: Ecology of Reefs, Mangroves & Seagrasses/Lab
- BIOE 165: Marine Conservation Biology
- BIOE 172 Population Genetics
- BIOL 111A: Immunology
- BIOL 114: Cancer Cell Biology
- BIOL 115: Eukaryotic Molecular Biology
- BIOL 118: Principles of Human Genetics
- BIOL 120: Developmental Biology
- BIOL 125: Intro to Neuroscience
- BIOL 130: Human Physiology
- BIOL 140: The RNA World
- METX 100: Introduction to Microbiology
- METX 119: Microbiology
- METX 135/L: Anatomy of the Human Body/Lab

**DC Requirement: 2 OF THE FOLLOWING BIOE COURSES: OR 1 OF THE FOLLOWING BIOL LABS:**

- |  |   |
|--|---|
| <input type="checkbox"/> BIOE 108: Marine Ecology  | <input type="checkbox"/> BIOL 103L: Toxic RNA Lab II                      |
| <input type="checkbox"/> BIOE 114/L: Herpetology/Lab   | <input type="checkbox"/> BIOL 105L: Eukaryotic Genetics Lab               |
| <input type="checkbox"/> BIOE 117: Systematic Botany   | <input type="checkbox"/> BIOL 106L: Eukaryotic Genetic Engineering Lab    |
| <input type="checkbox"/> BIOE 120/L: Marine Botany/Lab   | <input type="checkbox"/> BIOL 108L: Synthetic Gene Regulation Lab III     |
| <input type="checkbox"/> BIOE 122/L: Invertebrate Zoology/Lab  | <input type="checkbox"/> BIOL 109L: Yeast Molecular Genetics Lab          |
| <input type="checkbox"/> BIOE 127/L: Ichthyology/Lab   | <input type="checkbox"/> BIOL 115L: Eukaryotic Molecular Biology Lab      |
| <input type="checkbox"/> BIOE 128L: Large Marine Vertebrates Field Course  | <input type="checkbox"/> BIOL 120L: Developmental Biology Lab             |
| <input type="checkbox"/> BIOE 129 Marine Mammals   | <input type="checkbox"/> BIOL 121L: Environmental Phage Biology Lab       |
| <input type="checkbox"/> BIOE 137: Molecular Ecology   | <input type="checkbox"/> BIOL 186L: Undergraduate Research in MCD Biology |
| <input type="checkbox"/> BIOE 141L: Behavioral Ecology Field Course  |   |
| <input type="checkbox"/> BIOE 145: Plant Ecology   |   |
| <input type="checkbox"/> BIOE 145L: Field Methods in Plant Ecology   |   |
| <input type="checkbox"/> BIOE 150L: Ecological Field Methods   |   |
| <input type="checkbox"/> BIOE 151B/ENVS 109B: Ecology and Conservation in Practice Supercourse: Ecological Field Methods Lab |   |
| <input type="checkbox"/> BIOE 153C: Disciplinary Communication for Biologists  |   |
| <input type="checkbox"/> BIOE 158L: Marine Ecology Lab   |   |
| <input type="checkbox"/> BIOE 159A: Marine Ecology Field Quarter: Marine Ecology with Lab                                    |   |
| <input type="checkbox"/> BIOE 161L: Kelp Forest Ecology Lab  |   |
| <input type="checkbox"/> BIOE 171: Disciplinary Communication for Biologists   |   |
| <input type="checkbox"/> BIOE 172: Population Genetics   |   |

\*For 2-credit BIOE lab courses listed above that are taken concurrently with 5-credit lectures, both courses must be passed to receive one half of the DC requirement. BIOE 117 and BIOE 137 require concurrent enrollment in 2-credit labs, BIOE 117L and BIOE 137L, but these are not part of the DC requirement.

**SENIOR EXIT REQUIREMENT IS SATISFIED BY COMPLETING ONE ADDITIONAL LAB OR FIELD COURSE (BIOL or BIOE course identified with an "L").**

Senior Exit Completed

Please refer to your 2021-22 UCSC General Catalog for more information or clarification