

**MARINE BIOLOGY B.S.****2018-19**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Quarter offered: F=Fall, W=Winter, S=Spring, (-) = Not offered this year

ID#: \_\_\_\_\_

NOTE: Courses appearing in more than one category can fulfill only one requirement.

**All courses on check list MUST be taken for a letter grade.****LOWER DIVISION REQUIREMENTS****Calculus:** MATH 11A (FWS) \_\_\_ + 11B (FWS) \_\_\_  
**OR** MATH 19A (FWS) \_\_\_ + 19B (FWS) \_\_\_**Gen Chem:** CHEM 1A (FWS) \_\_\_ + 1B (FWS) \_\_\_ + 1C/N (FWS) \_\_\_**Biology:** BIOL 20A (FWS) \_\_\_ + BIOE 20B (FWS) \_\_\_ + BIOE 20C (FWS) \_\_\_**Physics:** PHYS 6A/L (FWS) \_\_\_ + 6B (WS) \_\_\_ **OR** PHYS 6A/L (FWS) \_\_\_ + 6C (FS) \_\_\_  
**OR** PHYS 7A/6L (-) \_\_\_ + 7B (-) \_\_\_**Biostatistics:** AMS 7/L (FWS) \_\_\_**UPPER DIVISION REQUIREMENTS** (11 total including 2 lab/field courses: \_\_\_\_\_ )**Genetics:** BIOL 105 (FWS) \_\_\_**Evolution:** BIOE 109 (FWS) \_\_\_**Ecology:** ONE of the following...  
BIOE 107 Ecology (FWS) \_\_\_  
BIOE 108 Marine Ecology (W) \_\_\_**Marine:** ONE from the following...  
BIOE 120/L Marine Botany (S) \_\_\_  
BIOE 122/L Invertebrates (W) \_\_\_  
BIOE 127/L Ichthyology (W20) \_\_\_  
BIOE 129/L Marine Mammals (S) (lab optional) \_\_\_**Marine Environment:** ONE from the following...  
OCEA 101 Marine Environment (W) \_\_\_  
OCEA 130 Biological Oceanography (S) \_\_\_**Major Qualification Policy:**

- 1) CHEM 1A
- 2) CHEM 1B
- 3) BIOL 20A
- 4) BIOE 20B
- 5) BIOE 20C

Must complete all six courses with a "C" or better; no more than 1 non-passing grade in the first 5 qual courses is accepted.

- 6) MATH 11A or MATH 19A

**Topical Electives:** THREE from the following...

BIOE 108 Marine Ecology (W) ___	BIOE 163/L Ecology of Reefs, Mangroves, & Seagrasses (W) ___
BIOE 120/L Marine Botany (S) ___	BIOE 165 Marine Conservation Biology (F) ___
BIOE 122/L Invertebrates (W) ___	EART 102 Marine Geology (-) ___
BIOE 127/L Ichthyology (W20) ___	EART 105 Coastal Geology (W) ___
BIOE 128L Large Marine Vertebrates Field (S) ___	OCEA 118 Marine Microbial Ecology (S) ___
BIOE 129/L Marine Mammals (S) (lab optional) ___	OCEA 130 Biological Oceanography (S) ___
BIOE 136 Environmental Physiology (F) ___	
BIOE 155 Freshwater Ecology (F) ___	Field Quarter:
BIOE 155L Freshwater Ecology Lab (-) ___	___ BIOE 159ABCD Marine Ecology Field Quarter (F18)*
BIOE 158L Marine Ecology Lab (-) ___	*See course equivalencies on reverse
BIOE 161 Kelp Forest Ecology (F19) ___	
BIOE 161L Kelp Forest Ecology Lab (F19) ___	

**THREE additional EEB General Electives:** \_\_\_\_\_**DC:** Completion of TWO *approved* BIOE courses: \_\_\_\_\_

Note: DC courses must be taken at UCSC. Review approved courses here:

<https://www.eeb.ucsc.edu/academics/undergrad/majors-academic-planning/majors-academic-planning-dc.html>**COMPREHENSIVE REQUIREMENT** (Senior Exit Requirement): \_\_\_\_\_

For details see:

<https://www.eeb.ucsc.edu/academics/undergrad/majors-academic-planning/majors-academic-planning-exit.html>

## Ecology & Evolutionary Biology GENERAL ELECTIVES

2018-19

Quarter offered: F=Fall, W=Winter, S=Spring, (-) = Not offered this year

**NOTE: Courses appearing in more than one category can fulfill only one requirement.**

BIOE 107 Ecology [Marine Biology only] (FWS) ____	BIOL 100 Biochemistry (FW)____
BIOE 108 Marine Ecology (W) ____	BIOL 101/L Molecular Biology (WS) ____
BIOE 112/L Ornithology (F19) ____	BIOL 110 Cell Biology (FS) ____
BIOE 114/L Herpetology (S20) ____	BIOL 115 Eukaryotic Molecular Biology (S)____
BIOE 117/L Systematic Botany of Flowering Plants (W) ____	BIOL 120 Developmental Biology (W) ____
BIOE 118 Plants and Society (S) ____	EART 100/L Vertebrate Paleontology (-) ____
BIOE 120/L Marine Botany (S) ____	EART 101/L Invertebrate Paleobiology (F) ____
BIOE 122/L Invertebrates (W) ____	EART 102 Marine Geology (-) ____
BIOE 124/L Mammalogy (F) ____	EART 105 Coastal Geology (W) ____
BIOE 125 Ecosystems of California (WS) ____	ECON 166A Game Theory and Applications I ____
BIOE 127/L Ichthyology (W20) ____	ECON 166B Game Theory and Applications II ____
BIOE 128L Large Marine Vertebrates Field (S) ____	*ENVS 104A/L Intro to Environmental Field Methods ____
BIOE 129/L Biology of Marine Mammals (lab optional) (S) ____	*ENVS 108 General Entomology ____
BIOE 131/L Animal Physiology (lab optional) (W) ____	*ENVS 115A/L GIS & Environmental Applications ____
BIOE 133/L Exercise Physiology (S20) ____	*ENVS 120 Conservation Biology ____
BIOE 134/L Comparative Vertebrate Anatomy (S) ____	*ENVS 122 Tropical Ecology & Conservation ____
BIOE 135/L Plant Physiology (F) ____	*ENVS 123 Animal Ecology & Conservation ____
BIOE 136 Environmental Physiology (F) ____	*ENVS 125 Ecosystems of California ____
BIOE 137/L Molecular Ecology (W) ____	*ENVS 129 Integrated Pest Management ____
BIOE 140 Behavioral Ecology (F) ____	*ENVS 130A/L Agroecology & Sustainable Agriculture ____
BIOE 141L Behavioral Ecology Field Course (W19) ____	*ENVS 130B Principles of Sustainable Agriculture ____
BIOE 145 Plant Ecology (F) ____	*ENVS 131 Insect Ecology ____
BIOE 145L Field Methods Plant Ecology (F18) ____	*ENVS 160 Restoration Ecology ____
BIOE 147 Community Ecology (S) ____	*ENVS 161A Soils & Plant Nutrition ____
BIOE 148A Quantitative Ecology (-) ____	*ENVS 162 Plant Physiological Ecology ____
BIOE 148B Quantitative Methods (W) ____	*ENVS 163 Plant Disease Ecology ____
BIOE 149 Disease Ecology (S) ____	*ENVS 167 Freshwater & Wetland Ecology ____
BIOE 150 Ecological Field Methods (-) ____	*ENVS 168 Biochemistry & the Global Environment ____
BIOE 150L Ecological Field Methods Lab (-) ____	METX 119 Microbiology (FS) ____
BIOE 155 Freshwater Ecology (F) ____	METX 119L Microbiology Lab (FWS) ____
BIOE 155L Freshwater Ecology Lab (-) ____	OCEA 118 Marine Microbial Ecology (S) ____
BIOE 158L Marine Ecology Lab (-) ____	OCEA 130 Biological Oceanography (S) ____
BIOE 161 Kelp Forest Ecology (F19) ____	*PSYC 123 Behavioral Neuroscience ____
BIOE 161L Kelp Forest Ecology Lab (F19) ____	
BIOE 163/L Ecology of Reefs, Mangroves & Seagrasses (W) ____	
BIOE 165 Marine Conservation Biology (F)____	
BIOE 171 Disciplinary Communication for Biologists (-) ____	
BIOE 172/L Population Genetics (F) ____	

\*Permission of instructor is required to enroll in these courses; be sure to check timing of offerings

### Field Quarter Equivalencies:

- \_\_\_\_ BIOE 151ABCD Ecology & Conservation in Practice (S19) = BIOE 150 + 150L + 1 EEB general elective
- \_\_\_\_ BIOE 153ABC Arctic Ecology (S20) = 1 Topical Elective + 2 EEB General Electives
- \_\_\_\_ BIOE 159ABCD Marine Ecology Field Quarter (F18) = BIOE 127/L + BIOE 108 + BIOE 158L
- \_\_\_\_ ENVS 107ABC Natural History Field Quarter (S19) = EEB General Elective (10 units)

### One of the following may also be used as an upper-division general elective:

- BIOE 183W Undergraduate Research in EEB (2 units) (FWS) \_\_\_\_ + BIOE 183L, 193, or 195 (minimum 3 units) (FWS) \_\_\_\_
- ENVS 183 Environmental Studies Internship (5 unit) \_\_\_\_