BS MARINE SCIENCES

2020-2021 *updated 01.13.20* **Units Required 180**

NAME _____

STUDENT ID _____

MINOR _____

Cal Poly, Higer Ed., and Major GPA at least 2.00	[ ] YES	[ ] NO
US Cultural Pluralism Met	[ ] YES	[ ] NO
60 Units Upper-Division Met Taken/Remaining	[ ] YES	[ ] NO
GWR Met	[ ] YES	[ ] NO
Upper-Division GE Met Taken/Remaining	[ ] YES	[ ] NO
Free Electives Met	[ ] YES	[ ] NO
C- or higher in A1, A2, A3, and B4	[ ] YES	[ ] NO
Residency Requirements Met	[ ] YES	[ ] NO

NOTE: This is a snapshot of the curriculum as originally published in the catalog. The Degree Progress Report (DPR) reflects updates to the published catalog. The DPR will be used to award your degree and

Note: No Major or Support courses may be selected as credit/no credit.

MAJOR COURSES (71)	Units	Grade	Grd Pts
BIO 160 Diversity & History of Life	4		
BIO 161 Cell & Mol Bio (B2&B3) [1]	4		
BIO 162 Organismal Form & Function	4		
BIO 263 Ecology & Evolution	4		
BIO 461[2] or 462[2] Senior Project	2		
CHEM 302 Marine Chemistry	3		
MSCI 100 Intro to Marine Sciences	1		
MSCI 300 Marine Ecology	4		
MSCI 301 Biological Oceanography	3		
MSCI 403 Ocean Sampling Techniques	4		
PSC 201 Physical Oceanography	4		
Marine Resources Conservation and Policy[3] BIO 363; MSCI 428, 438, 439	4		
Marine Biodiversity[3] MSCI 324, 437; MCRO 436; BIO 322, 336	4		
Communicating Science[3,4,5] (Excess applied to COMS 390 (4), 395 (4); ENGR 322/SCM 302 (2); MSCI 401 (1-2), 440 (3)	1		
Electives[3, 4, 5, 6] Select additional courses from Marine Resources Conservation and Policy, Marine Biodiversity, or Communicating Services (above) or select from Approved Electives.	25		

SUPPORT COURSES (49)

CHEM 127 Gen Chem for Ag & Life Sci I (B1)[1]	4
CHEM 128 Gen Chem for Ag & Life Sci II	4
CHEM 129 Gen Chem for Ag & Life Sci III	4
CHEM 216 Organic Chemistry I ***or*** CHEM 312 Sur. of Org. Chem	5
GEOL 102 Introduction to Geology	4
MATH 141 (B4) [1,7] or MATH 161 (B4)[1,7]	4
MATH 142 (GE Elective) [1,7] or MATH 162 (GE Elective)[1,7]	4
PHYS 121[8] or PHYS 141[8]	4
PHYS 122[8] or PHYS 132[8]	4
PHYS 123[8] or PHYS 133[8]	4
STAT 218 Stat for Life Sci	4
STAT 313 Applied Experimental Design & Regression Models	4

GENERAL EDUCATION (GE) 56

72 units required, *16 of which are specified in Major and/or Support.*

Minimum of 12 units required at the 300 level.

Area A English Language Comm and Critical Thinking 12

- A1 Oral Communication 4
- A2 Written Communication 4
- A3 Critical Thinking 4

Area B Scientific Inquiry & Quantitative Reasoning 4

- B1 Physical Science *(4 units in Support)* [1] .....
- B2 Life Science *(4 units in Major)* [1] .....
- B3 Laboratory Activity *(in Major/Support)* .....
- B4 Math/Quant. Reasoning *(4 units in Support)* [1] .....
- Upper-Division B 4

Area C Arts and Humanities 16

Lower-division Area C courses must come from 3 different subject prefixes

- C1 Arts[10] 4
- C2 Humanities[10] 4
- Lower-Div. C Elect.: C1 or C2[10] 4
- Upper- Division C 4

Area D Social Sciences 16

- D1 American Inst. (Title 5/40404) 4

Courses in D2 must come from 2 different subject prefixes

- D2 Lower-Division[11] 4
- D2 Lower-Division[11] 4
- Upper-Division D 4

Area E Lifelong Learning and Self-Development 4

- Lower-Division E 4

GE Electives in Area C and D 4

Select a course from Area C or D; may be upper- or lower-division

- GE Elective (GE Area C or D) 4
- GE Elective *(4 units of Area B in Support)* [1] .....

FREE ELECTIVES[9] 4

[1] Required in Major/Support; also satisfies GE.

[2] If BIO 461 or BIO 462 meets the Senior Project requirement, it cannot also be counted for Electives.

[3] If a course is taken to meet a major or support requirement, it cannot be double counted as an Elective.

[4] Maximum of 3 units may be applied toward Electives from COMS 390, 395; MSCI 440, ENGR 322/SCM 302.

[5] Maximum of 2 units may be applied toward Electives from ENGR 322/SCM 302.

[6] Maximum of 6 units may be applied toward Electives: BIO 200, 300, 400, 450,ENGR 400, MSCI 401, PHYS 400.

[7] Students emphasizing in Chemistry, Physics or Engineering should take MATH 141 and MATH 142 instead of MATH 161 and MATH 162. GE B4 will be met with any of the following: MATH 161, 162, 141, 142.

[8] Students emphasizing in Physics should take PHYS 141, 132, and 133 instead of PHYS 121, 122 and 123. GE B1 will be met with any of the following: PHYS 141, 132, 121 or 122.

[9] If a GE course is used to satisfy a major or support requirement, additional units of Free Electives may be needed to complete total units required for degree.

[10] C1, C2, and C elective must come from three different subject prefixes.

[11] Second D2 must be a different subject prefix from the first D2.

APPROVED ELECTIVES (25)

Select from the following :[3,4,5,6]

AG/EDES/ENGR/GEOG/ISLA/SCM/UNIV 350 Global Envn (B7) [9]
BIO 200 Special Problems for Undergraduates[6]
BIO 300 Research Experience for Undergraduates[6]
BIO 327 Wildlife Ecology
BIO 330 Extended Field Biology Activity[6]
BIO 351 Principles of Genetics
BIO 361 Principles of Physiology
BIO 400 Special Problems for Advanced Undergraduates[6]
BIO 413 Evolutionary Medicine
BIO 414 Evolution
BIO 415 Biogeography
BIO 419 Analytical Methods in Ecology
BIO 434 Environmental Physiology
BIO 442 Behavioral Ecology
BIO 444 Population Ecology
BIO 445 Community Ecology
BIO 446 Ecosystem Ecology
BIO 450 Undergraduate Laboratory Assistantship[6]
BIO 452 Cell Biology
BIO 461 Senior Project - Research Proposal [2]
BIO 462 Senior Project - Research [2]
BIO 463 Honors Research
BIO 470 Selected Advanced Topics
BIO 471 Selected Advanced Laboratory
BIO 472 Current Topics in Biological Research
BIO/CHEM 475 Molecular Biology Laboratory
CHEM 217 Organic Chemistry II
CHEM 218 Organic Chemistry III
CHEM 220 Organic Chemistry Laboratory For Life Sciences II or CHEM 221 Organic Chemistry Laboratory II
CHEM 223 Organic Chemistry Laboratory for Life Sciences III or CHEM 324 Organic Chemistry Laboratory III
CHEM 313 Survey of Biochemistry and Biotechnology
CHEM 331 Quantitative Analysis
CHEM 341 Environmental Chemistry: Water Pollution
CHEM 371 Biochemical Principles
CHEM 372 Metabolism
CHEM 400 Special Problems for Advanced Undergraduates[6]
COMS 390 Environmental Communication[4]
COMS 395 Science Communication[4]
CPE/CSC 101 Fundamentals of Computer Science I
CPE/CSC 202 Data Structures
CPE/CSC 203 Prj-Based Obj-Orient Prgrm and Design
CRP/NR 404 Environmental Law
DATA 301 Introduction to Data Science
EE 201 Electric Circuit Theory
EE 321 Electronics
ENGR 322/ SCM 302 Learn by Doing Lab[4,5]
ENGR 400 Special Problems for Advanced Undergraduates[6]
ENVE 434 Water Chemistry and Water Quality Measurements
MATH 143 Calculus III
MATH 244 Linear Analysis I
MCRO 436 Environmental Microbiology
MSCI 307 World Aquaculture: App, Methodol, and Trends
MSCI 330 Technologies for Ocean Discovery (B7) [9]
MSCI 401 Marine Science Outreach[6]
MSCI 410 Scientific Diving
MSCI 440 Comm Ocean Sci to Informal Audiences[3,4]

NR/LA 317 World of Spatial Data and Geo Info Tech (B7)[9]
NR 321 Water Systems Tech, Issues & Impacts (B7)[9]
PHYS 400 Special Problems for Adv Undergraduates[6]
STAT 323 Design and Analysis of Experiments I
STAT 324 Applied Regression Analysis or STAT 334 Applied Linear Models
STAT 330 Statistical Computing with SAS
STAT 331 Statistical Computing with R