

MARINE SCIENCES (BS)

Marine Sciences

*Suggested Four-Year Flowcharts are planning guides and do not represent a required course sequence.
Courses may be completed in a different order, provided requisite requirements are satisfied.*

First Year

Term 1		Units
MSCI 1100	Orientation to Marine Sciences	1
BIO 1150	Life: History and Diversity (5C) ¹	4
CHEM 1120	Fundamentals of Chemical Structure and Properties	4
STAT 1110	Applied Statistical Concepts and Methods	3
General Education Requirement (1A)		3
Units		15

Term 2		Units
MSCI 1111	The Oceans (5B) ¹	3
MSCI 1112	The Oceans Laboratory	1
BIO 1151	Life: Molecules and Cells	4
CHEM 1122	Fundamentals of Chemical Reactivity	4
General Education Requirement (1C)		3
Units		15

Second Year

Term 1		Units
PSC 2201	Physical Oceanography (5A) ¹	3
PHYS 1121 or PHYS 1141	College Physics I ⁶ or General Physics I	4
MATH 1261 or MATH 1264	Calculus I (2) ^{1,5} or Calculus for Data Science I	4
General Education Requirement (1B)		3
General Education Requirement		3
Units		17

Term 2		Units
MSCI 3300	Marine Ecology	4
PHYS 1123 or PHYS 1143	College Physics II ⁶ or General Physics II	4
General Education Requirement		3
General Education Requirement		3
Units		14

Third Year

Term 1		Units
MSCI 3301	Biological Oceanography	3
CHEM 2240 or CHEM 2242	Organic Chemistry: Fundamentals and Applications or Organic Chemistry I	4-5
Marine Science Elective ^{3,4}		4
General Education Requirement		3
Units		14

Term 2		Units
CHEM 3370	Marine Chemistry	3
Marine Science Elective ^{3,4}		3
Approved Elective ^{2,7,8}		4
General Education Requirement		3
Free Elective ⁹		2
Units		15

Fourth Year

Term 1		Units
Marine Science Elective ^{3,4}		4
Approved Elective ^{2,7,8}		4
General Education Requirement		3
General Education Requirement		3
Units		14

Term 2		
BIO 4461 or BIO 4462 or BIO 4463	Senior Project - Research Proposal ² or Senior Project - Research Experience or Senior Project - Meta-analysis in Biology	2
Marine Science Elective ^{3,4}		4
Approved Elective ^{2,7,8}		4
General Education Requirement		3
Free Elective ⁹		2-3
	Units	16
	Total Units	120

¹ Required in Major or Support; also satisfies General Education (GE) requirement.

² If BIO 4461, BIO 4462, BIO 4463, CHEM 4461, PHYS 4461, or PHYS 4462 is used to meet the senior project requirement, it cannot be double-counted as an elective. If a student takes more than one of these courses, the additional units can be applied to electives.

³ Courses taken to meet a Major or Support requirement cannot be double-counted in Approved Electives.

⁴ Excess units will be applied to Approved Electives.

⁵ Students emphasizing in Chemistry, Engineering, or Physics should take MATH 1261.

⁶ Students emphasizing in Physics should take PHYS 1141 and PHYS 1143 instead of PHYS 1121 and PHYS 1123. Note: MATH 1261 is required for PHYS 1141.

⁷ Maximum of 6 units may be applied toward Approved Electives: BIO 2200, BIO 3300, BIO 4400, BIO 4450, BIO 4466, BIO 4485, BIO 4495, ENGR 4400, ENVE 4400, GEOL 2200, GEOL 4400, PHYS 4400.

⁸ A maximum of 3 units from COMS 3390, COMS 3395, SCM/ENGR 3302, MSCI 4401.

⁹ If a General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.