

## Requirements for Marine Science Minor

2018-2019, 2019-2020, 2020-2020, 2021-2022, & 2022-2023

The Marine Science minor requires a minimum of 18 units.

A minimum of 12 units must be upper-division units.

The cumulative GPA for the minor must be 2.0 or higher. A minimum GPA presupposes that at least one 3-unit course in the minor is University Credit.

The Marine Science minor is intended to serve as a broad introduction to the world's oceans and therefore is designed to acquaint the student with the major aspects of the marine system. These can be broadly categorized as the biological ocean, the physical ocean and human impacts on the ocean.

The marine science minor curriculum addresses these core competencies by requiring a choice of two lower division courses from the biological ocean and human impact categories.

A basic understanding of the physical science of the ocean is essential to understanding the biological ocean and the causes and consequences of human impacts on the ocean. For this reason, all students in the minor are required to take GEOS 412A, "Ocean Science", a three-unit course.

The remaining nine units are selected from a variety of upper division courses chosen at the student's discretion, classified as biology, human impact or geoscience of the oceans, but with no more than six of the remaining nine units coming from the same category.

A minimum of 6-units must be unique to the minor.

### **MARINE SCIENCE MINOR**

COURSE	TITLE	PRE-REQUISITE(S)	SEMESTER OFFERED	UNITS
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#### **The Biological Ocean – Complete one course:**

ECOL 182R	Introductory Biology II – lecture	None	Fall, Spring, or Summer	3
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#### **Human Impact on the Oceans – Complete one of the following:**

ANTH 203	Caribbean Transformations		Fall	3
ECOL 206	Environmental Biology	Not currently scheduled		3
GEOG 230	Our Changing Climate	One year of science, or consent of instructor	Fall, Summer (sometimes Spring and Winter)	3
GEOS 212	Introduction to Oceanography	One year of science, or consent of instructor	Fall, Spring, Summer	3

#### **Survey Course of the Oceans, Upper-Division – Complete one course:**

GEOS 412A	Ocean Science	One year of science, or consent of instructor	Spring	3
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**Area Studies – Complete three courses from the following, with no more than two courses from any given category:**

**Biology of the Oceans, Upper-Division**

ECOL 404R	Biology of the Oceans	Not currently scheduled		3
ECOL 450	Marine Discovery	ECOL 182R and ECOL 182L or ECOL 183 or GEOS 212 or GEOS 412A	Fall	4
ECOL 482	Ichthyology	ECOL 182R and ECOL 182L	Fall	4
ECOL 496O-SA	Galapagos Marine Ecology	None	Summer dynamic	6

**Human Impact on the Oceans, Upper-Division**

ACBS 456	Introduction to Aquaculture	ECOL 181R, ECOL 182R, ECOL 182L, CHEM 103A, CHEM 103B, CHEM 104A, CHEM 104B	Spring	3
ECOL 360	Marine Ecology and Conservation	ECOL 182R	Spring	3
ECOL 406	Conservation Biology	ECOL 182R and ECOL 182L, ECOL 302	Spring	3
ECOL 474	Aquatic Plants and the Environment	None	Fall	4
ECOL 475	Freshwater and Marine Algae	Four units of biological or plant sciences	Spring	4
RNR 480	Natural Resources Policy and Law	RNR 200	Spring	3
WFSC 385	Zoo and Aquarium Management	None	Fall	3
WFSC 455R/L	Fisheries Management	WFSC 441	Spring	4

**Geoscience of the Oceans, Upper-Division**

GEOS 302	Sedimentology and Stratigraphy	GEOS 251, CHEM 151, PHYS 102 or 141	Fall	3
GEOS 308	Paleontology	GEOS 251	Spring	3
GEOS 342	The History of Earth's Climate	GEOS 251	Fall	3
GEOG 430	The Climate System	None	Fall	3
GEOS 478	Global Change	Junior standing	Fall	3
GEOS 479	Introduction to Climate Dynamics	MATH 122B	Spring	3