



Marine Biology Major

Marine biology studies life processes of organisms inhabiting saltwater environments—from genetics and evolution to physiological traits and ecosystem functioning. The major is focused on the intersection of marine sciences taught in Oceanography and Aquatic and Fishery Sciences, and all students complete an integrative field experience: a research or field course offered at our marine field station, Friday Harbor Labs. Graduates of Marine Biology are prepared for careers in management agencies at the local to international levels, environmental consulting, non-profit organizations and a range of educational settings.

DECLARE A MAJOR IN MARINE BIOLOGY

Marine Biology is an open major that can be declared at any time by currently enrolled UW undergraduates. To declare the major, contact the Marine Biology Academic Adviser at marbiol@uw.edu.

REQUIREMENTS (106–113 credits)

Foundation Courses in Science and Mathematics (43–50 credits)

Biology (10 credits)

- BIOL 180 Introductory Biology (5)
- BIOL 200 Introductory Biology (5)

Chemistry (10–15 credits)

Choose one of the following sequences:

- CHEM 120 Principles of Chemistry I (5)
- OCEAN 295 Chemistry of Marine Organic Carbon (5)

or:

- CHEM 142 General Chemistry I (5)
- CHEM 152 General Chemistry II (5)
- OCEAN 295 Chemistry of Marine Organic Carbon (5)

or:

- CHEM 142 General Chemistry I (5)
- CHEM 152 General Chemistry II (5)
- CHEM 162 General Chemistry III (5)

Statistics (5 credits)

Choose one:

- Q SCI 381 Intro. to Probability and Statistics (5)
- STAT 311 Elements of Statistical Methods (5)

Math (10 credits)

Choose one of the following sequences:

- Q SCI 291 Analysis for Biologists I (5)
- Q SCI 292 Analysis for Biologists II (5)

or:

- MATH 124 Calculus with Analytic Geometry I (5)
- MATH 125 Calculus with Analytic Geometry II (5)

Physics (8–10 credits)

Choose one:

- PHYS 114 General Physics I (4)
- PHYS 121 Mechanics (5)

and one of:

- PHYS 115 General Physics II (4)
- PHYS 122* Electromagnetism (5)
- OCEAN 285 & 286 Physics Across Oceanography: Fluid Mechanics and Waves with Lab (5)

*requires PHYS 121



Introduction to the Marine Environment (14 credits)

Choose one (lab section required):

FISH/OCEAN/BIOL 250 Marine Biology (5)

or:

OCEAN 200 and 201 Introduction to Oceanography (5)

and:

FISH/OCEAN/MARBIO 270 Aquatic Ecophysiology (5) (will accept BIOL 220 as a substitute)

OCEAN 210 Integrative Oceans (4)

Marine Biology Core (15 credits)

FISH 323 Conservation and Management of Aquatic Resources (5)

OCEAN 330 Marine Biogeochemical Cycles (5)

MARBIO/FISH/OCEAN 370 Marine Evolutionary Biology (5)

Communication (3 credits)

Choose one:

MARBIO 305 Scientific Writing in Marine Biology (3)

FHL 333 Science Writing for Diverse Audiences (3/5)

Electives (25 credits)

Review the department's approved elective list at marinebiology.uw.edu.

Requirement	Course	Credits	Lab	400-level
Biodiversity				
One course	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
Ecology and Ecosystems				
One course	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
Organismal Processes				
One course	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
Other Electives				
(Additional courses to bring total to 25 credits)				
	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

Lab: Check two courses from your list taken with a lab section

400-level: Check three courses from your list taken at the 400-level

Research: Maximum of 6 credits of independent research

Integrative Field Experience (6 credits)

Choose one from the following list. 6 additional credits of MARBIO 479, FHL 492 or OCEAN 492 may be applied to the "Other Electives" requirement. Research or field courses at other marine field stations, labs or study abroad programs may be accepted by petition.

MARBIO 488 Marine Biology in the Field (6)

MARBIO 479 Research in Marine Biology (1-15)

FHL 470 Research in Marine Biology (6)

FHL 492 Ecology and Conservation of Marine Birds and Mammals (9)

OCEAN 492 Friday Harbor Apprenticeship (15)

MARINE BIOLOGY MAJOR ELECTIVES

Requirement Summary



















One course minimum from Biodiversity, Ecology and Ecosystems, and Organismal Processes

Additional elective courses to bring total credits to 25


Minimum of 3 courses taken at the 400 level

Minimum of 2 courses taken with lab sections

Maximum of 6 credits of independent research

Title	Course Number	Credits	Lab*
BIODIVERSITY (1 course minimum)			
Biology of Fishes	FHL 305	5	
Biology of Fishes	FISH 311	3/5	
Biology of Shellfishes	FISH 310	5	
Invertebrate Zoology	BIOL 434	5	
Marine Botany	FHL 440/BIOL 445	5	
Marine Botany: Diversity and Ecology	FHL 446	9	
Marine Invertebrate Zoology	FHL/BIOL 432	9	
Marine Mammals of the Salish Sea	FHL 375	5	
Marine Zoology	FHL/BIOL 430	5	
Special Topics in Biological Oceanography	OCEAN 431	3	
ECOLOGY AND ECOSYSTEMS (1 course minimum)			
Arctic Marine Vertebrate Ecology	FISH 464	4	
Marine Ecology	BIOL 433	5	
Marine Ecological Processes	BIOL 423	3	
Marine Mammalogy	FISH 475	5	
The Changing Arctic Ocean	OCEAN 482	3	
ORGANISMAL PROCESSES (1 course minimum)			
Aquatic Animal Physiology and Reproduction	FISH 324	3/5	
Comparative Anatomy and Physiology of Marine Organisms	FHL 471	5	
Genetics and Molecular Ecology	FISH/BIOL 340	5	
Tropical Marine Biology	FISH 427	5	
OTHER ELECTIVES (Additional courses to a total of 25 credits)			
Aquatic Invasion Ecology	FISH 423	4	
Biology and Culture of Aquatic Organisms	FISH 424	5	
Climatic Extremes	OCEAN 450	4	
Diseases of Aquatic Organisms	FISH 404	5	
Ecological Modeling	FISH/Q SCI 454	5	
Ecology and Conservation of Marine Birds and Mammals	FHL 492	9	
Fisheries Ecology	FISH 312	3/5	
Marine Pollution	OCEAN 409	3	
Modeling and Estimation In Conservation and Resource Management	FISH/Q SCI 458	4	
Salmonid Behavior and Life History	FISH 450	5	
Topics in Sustainable Fisheries	FISH 478	3	
RESEARCH COURSES (Maximum of 6 credits)			
Research in Marine Biology	FHL 470	6	
Friday Harbor Research Apprenticeship	OCEAN 492	15	

*  meets lab requirement

 must take 5 cr. section to meet lab requirement