

Biology Major - Marine Biology and Ecology Option 2024-25

Document available online at <https://ib.oregonstate.edu/undergraduate/advising/college-advising-guide>.

The Marine Biology option is designed to give students a rigorous background in marine biology and ecology. It is an excellent way to prepare for a variety of marine science careers or graduate programs. A term in residence at Hatfield Marine Science Center is required to complete the spring or summer tracks of the option, and the spring BI 450 Marine Biology and Ecology course in Track I is by application only the fall before attending. Students planning on one track, spring or summer, should not take courses from the other listed track. Interested students may also complete the optional, 1-credit BI 111 Introduction to Marine Life in the Sea experiential course taught on winter term weekends at Hatfield Marine Science Center. The marine biology option covers the Biology and Society, Organismal Biology, Physiology, Writing Intensive Course (WIC) and Experiential Learning or Integrative Biology Elective requirements for the biology major. **Previous versions of this option are different and are tracked in MyDegrees – see MyDegrees for details. All courses and prerequisites are subject to change, and the listing of term offered is based on projected Corvallis campus and Hatfield Marine Science Center offerings.**

Core Requirements

Course	Description (Credits)	Term(s)	Pre-requisites	Comments
BI 347	Oceans in Peril (3cr)	W	BI 221, 222, 223 (C-)	BC: Science, Tech. & Society
OC 201	Oceanography (4cr)	F, W	-	-
Z 423	Environmental Physiology (3cr)	F	BI 221, 222, 223 (C-) & CH 233/263 (C-)	-

Hatfield Marine Science Center Tracks: Select one of the following tracks.

Spring Track: Hatfield term is spring of junior year. Admission by application only, and BI 370 and ST 351 are prerequisite.

Course	Description (Credits)	Term(s)	Pre-requisites	Comments
BI 450	Marine Biology & Ecology (WIC Course) (15cr)	SP*	BI 370, ST 351 (ST 352 recommended), junior+	*Hatfield only, by application (fall)

Summer Track: Hatfield courses are completed in summer and other courses are taken at Corvallis campus

Course	Description (Credits)	Term(s)	Pre-requisites	Comments
BI 351	Marine Ecology (3cr)	W	BI 221, 222, 223 (C-)	-
BI 353	Pacific NW Coastal Ecosystems (4cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
BI 373	Field Methods in Marine Ecology (3cr)	Sp	BI 370, ST 351	-
BOT 416 OR	Aquatic Botany (4cr)	F	BI 221, 222, 223 (C-)	-
BOT 417 OR	Phycology (4cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
FW 315	Ichthyology (3cr)	F	BI 221, 222, 223 (C-)	-
Z 461	Marine and Estuarine Invertebrate Zoology (4cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield only

Experiential Learning or Marine Elective Course(s) Tracks:

Select one of the following based on your selection of the spring or summer track above:

Spring Track: Select a course from Track I and II or two courses from Track II

Summer Track: Select one course from Track I or II

Track I Experiential Learning Credits (Complete any combination of three credits of the following)

Course	Description (Credits)	Term(s)	Pre-requisites	Comments
BI 309 OR BI 409	Teaching Practicum OR Advanced Practicum (1-3cr)	F, W, Sp	Departmental approval required*	*See form here
BI 401	Research and Scholarship (1-3cr)	All	Departmental approval required*	*See form here
BI 406	Projects – Curatorial Assistant (1-3cr)	All	Departmental approval required*	*See form here
BI 410	Internship (1-3cr)	All	Departmental approval required*	*See form here

Track II Marine Elective Course (select one or two courses)

Course	Description (Credits)	Term(s)	Pre-requisites	Comments
BI 353	Pacific NW Coastal Ecosyst. (4cr) (if not used above)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
BI 358	Symbiosis and the Environment (3cr)	W*	BI 221, 222, 223 (C-) & CH 233/263 (C-)	*Alternate years
BI 485	Monster Biology (3cr)	W	BI 311*, BI 370*	*May be taken concurrently
BOT 417 OR	Phycology (4cr) (if not used above)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
BOT 416	Aquatic Botany (4cr) (if not used above)	F	BI 221, 222, 223 (C-)	-
FW 302 OR	Biology and Conservation of Marine Mammals (4cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
FW 315 OR	Ichthyology (3cr) (if not used above)	F	BI 221, 222, 223 (C-)	-
FW 316 OR	Systematics of Fishes (3cr)	F	BI 221, 222, 223 (C-)	-
FW 331 OR	Ecology of Marine and Estuarine Birds (4cr)	Su*	BI 221, 222, 223 (C-)	*Hatfield only
FW/OC 434 OR	Estuarine Ecology (4cr)	F	BI 221, 222, 223 (C-)	-
FW 464 OR	Marine Conservation Biology (3cr)	F	BI 370	-
FW 469	Physiology & Behavior Marine Megafauna (3cr)	F*	BI 221, 222, 223 (C-)	*Hatfield hybrid course
MB 314	Aquatic Microbiology (3cr)	Sp	BI 221, 222, 223 (C-) & CH 233/263 (C-)	-
OC 340	Biological Oceanography (4cr)	Sp, Su*	BI 221, 222, 223 (C-). OC 201 (C-)	*Hatfield in summer

Marine Biology Careers

Marine biologists are involved in diverse areas such as community ecology, ocean pollution mitigation, marine physiology, marine natural products and ocean policy. Few individuals work on the science of a very specific group of organisms such as marine mammals, and therefore broad training is considered advantageous. Entry-level positions in the field include technician work in many settings such as agencies, non-governmental organizations, environmental consulting companies and academia. Graduate work in marine biology can be an important consideration as it increases both salary and opportunities.

The marine biology option requires an additional 15 credits of coursework beyond the biology major. For this reason, students completing the option have a solid foundation for [a career in marine biology](#) and biological fields in general. All students interested in marine biology should plan to get professional experience before graduation as it is critical to employment and graduate school opportunities. OSU offers a wealth of opportunities (see Research and Internships below).

BI 450 Marine Biology and Ecology and Summer Courses at Hatfield Marine Science Center

A variety of marine, field-intensive courses are offered at Hatfield Marine Science Center (HMSC). Students taking these courses live in HMSC Residence Halls on the coast in Newport, Oregon during spring or summer terms.

- **BI 450 - Spring:** This 15-credit Marine Biology course taught spring term satisfies the Spring Track of the option and the major WIC requirement. Admission to BI 450 is by application each fall and restricted to students in their third year or later who have taken or are taking BI 370 Ecology and Statistics 351. The course covers marine invertebrates, algae, fishes, intertidal and coastal ecology, marine conservation, and features student research projects. Spring students may elect to stay on until summer to complete additional marine elective.
- **Summer:** There are a variety of [HMSC summer courses](#). Students in the Summer Track of the marine biology option complete the BI 353 and Z 461, generally with two other marine courses for their option.

International Opportunities

Many [international programs](#) in marine biology are available through OSU. These programs can be integrated in to a four- year degree with the Marine Biology Option and include a diverse group of study abroad and international internships choices.

Professional Experience

Units with marine research faculty include Integrative Biology, Fisheries and Wildlife, Microbiology, College of Earth, Ocean and Atmospheric Sciences and others. Hatfield Marine Science Center also has faculty and agency opportunities. Students should look up faculty research on department websites and contact them about volunteering, as most student positions start as unpaid.

- **Ocean11 Club\Marine Team:** [The Ocean11 Club](#) is for students interested in marine studies at OSU. [The Marine Team](#) is connected to Ocean11 and highlights specific marine research opportunities.
- **Integrative Biology research labs:** Student should look broadly for marine opportunities, but you can see information about [labs in IB here](#).
- **Hatfield Marine Science Center and Sea Grant Programs:** [HMSC research](#) & [HMSC internships](#)
- **Aquarium opportunities:** [Oregon Coast Aquarium volunteers](#)
- **Hatfield Marine Science Center:** [Volunteering in the visitor center](#) or contact [Sid Stetson](#) for aquarium volunteering
- **Scientific Diving:** OSU offers a [Scientific Diving Program](#) and an FW 430 Introduction to Scientific Diving course (see catalog). FW 430 requires introductory diving courses or experience as prerequisite.
- **Other marine opportunities:** [Off campus opportunities](#)