

## Academic Track in the Biological Science Major

# **MARINE BIOLOGY**

Marine Biology is the study of sea-dwelling organisms with respect to any aspect of their biology, including ecology, physiology, behavior, reproduction and development, conservation, and evolution. Representatives of every group of microbes, plants, and animals on Earth live in the sea, and many marine organisms serve as 'model organisms' for studies in cell biology, developmental biology, biomechanics, and other sub-disciplines of biology. Marine organisms are prominently featured in natural product pharmaceutical development and biotechnology. Students following the Marine Biology Academic Track are preparing for academic, government agency, consulting or conservation-oriented careers, some of which require a B.Sc. Degree, and others of which require a graduate degree (e.g., M.S., Ph.D., D.V.M.). A helpful website for exploring the variety of career choices is: <http://www.marinecareers.net/>. Students who are especially interested in research in marine biology, and look forward to completing an honors thesis, may want to apply in the spring of their sophomore or junior year to become a member of the **Marine Biology Honors Program**, which includes participation in the Marine Biology Honors Seminar.

**CURRICULUM** A solid background in biology, especially ecology and evolution, is the best preparation for a career in marine biology. A combination of conceptually and organism-oriented courses is highly recommended. The electives you choose will depend on the particular aspect of Marine Biology that attracts you, and we very strongly encourage you to consult with academic advisors, as well as faculty and graduate students in marine biology. Please note that some of the required courses have pre-requisites that should be taken care of as early as possible. Research experience (e.g., UROP, WIMSE, DIS, HITM) can be an invaluable aspect of your education, and we recommend that you contact individual faculty after exploring faculty websites and reading representative publications from labs of faculty with expertise that especially interests you.

### **Required Courses for the Marine Biology Track:**

BSC 3312 Marine Biology (3)  
PCB 3043 General Ecology (3)  
PCB 4674 Evolution (3) [pre-req. is Genetics]  
ZOO 3205 Advanced Invertebrate Zoology (4) [pre-req. is Marine Biology and/or Animal Diversity Lab or Eukaryotic Diversity BSC 3016]  
**or** an equivalent course, focused on marine organisms, at a marine lab

### **Recommended Courses within the Department of Biological Science:**

BSC 3052 Conservation Biology (3)  
BSC 4933 Lab in Ecology (2)  
ZOO 5413 Animal Behavior (4)  
MCB 4403/L Prokaryotic Biology (3)/Lab (2)  
BSC 3402L Experimental Biology (Marine, taught by Levitan)  
BSC 4933 Biogeography  
BSC 4933 Marine Biology Honors Seminar (requires admission to the **Marine Biology Honors Program**)

### **Relevant Courses in other departments at FSU:**

GLY 3610C Paleontology (4) [pre-req. is Historical Geology, or review of the text for that course]  
OCB 4631 Coastal Ecology  
OCE 4008 Principles of Oceanography  
OCB 4637 Marine Benthic Ecology  
OCB 5636 Marine Microbial Ecology  
OCB 5050 Basic Biological Oceanography  
OCE 4265 Coral Reefs [online]  
OCE 4064 Marine Conservation Biology  
OCB 5565 Marine Primary Production

OCB 5635 Coastal Processes  
OCE 4930 Oceanographic Studies: Marine Megafauna Ecology  
OCE 4030 Oceanographic Studies: Basic Biological Oceanography

**DEPARTMENT OF BIOLOGICAL SCIENCE FACULTY** value interaction and discussion with undergraduate students and encourage individual participation in research projects. The following faculty members have expertise in **marine biology**:

*Scott Burgess*: Population biology of coastal marine invertebrates  
*Don Levitan* Population biology of marine organisms, reproductive strategies and mating success  
*Sophie McCoy* Marine intertidal community ecology, responses of macroalgae to climate change,  
*Daniel Okamoto* Fisheries management, trophic interactions  
*Andrew Rasweiller* Modeling marine community dynamics of kelps & fisheries  
*Janie Wulff* Ecology and evolution of marine organisms of coral reefs, seagrass meadows, & mangroves; ecology and evolution of mutualism

**FSU Coastal and Marine Lab Faculty**

*Jeroen Ingels*. Ecology of food webs and of meifauna  
*Sandra Brooke* Ecology of deep-sea corals  
*Felicia Coleman* Life history strategies of fishes; fisheries management,  
*Dean Grubbs* Elasmobranch ecology and conservation  
*Chris Koenig* Fish behavior and ecology,

**Department of Earth, Ocean and Atmospheric Science Faculty:**

*William Parker* Paleoecology  
*Jeremy Owens* Paleooceanography  
*Amy Baco-Taylor* Deep-sea benthic ecology  
*Jeff Chanton* Chemical oceanography, environmental geology  
*Marcus Huettel* Ecology of coastal sediments and productivity  
*Mariana Fuentes* Marine conservation and resource management  
*Angie Knapp* Marine biogeochemistry, nitrogen cycling  
*Sven Kranz* Marine phytoplankton ecology, primary production  
*Ian MacDonald* Deep ocean extreme communities  
*Olivia Mason* Marine microbial ecology  
*Mike Stukel* Marine plankton dynamics, biogeochemical modeling  
*Seth Young* Paleooceanography