

## JOINT PROGRAM WITH WOODS HOLE OCEANOGRAPHIC INSTITUTION

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### Biological Oceanography

The Joint Program in Oceanography/Applied Ocean Science and Engineering is a five-year program (<https://catalog.mit.edu/degree-charts/phd-biological-oceanography>) that offers a unique opportunity for training and research in areas that combine observational, experimental, and theoretical approaches to the study of biological systems. Biological oceanography seeks to describe and understand the biological processes that are active in the marine and bordering environments. The research of biological oceanographers is diverse and includes ecology, toxicology, biochemistry, animal behavior and physiology, and molecular biology.

The Departments of Biology; Civil and Environmental Engineering; and Earth, Atmospheric, and Planetary Sciences offer programs with WHOI in biological oceanography. Students applying to the Joint Program must choose biological oceanography as their discipline and additionally choose one of the three associated MIT departments.

All students are required to submit a proposed course of study to the MIT-WHOI Joint Program for approval before the beginning of their first semester. With the assistance of academic advisors from both institutions, each student formulates a program of study involving core courses, more advanced subjects specific to the student's research interest, seminars, and research activities. Students should meet annually with their advisor to review their progress as well as the Academic Program Office's expectations of both students and advisors.

Students are encouraged to enter the program during the summer preceding the first academic year to gain early exposure to the research programs at WHOI. Students should register for a minimum of 36 units for fall and spring semesters, with 24 units for the summer. Core coursework should be completed by the end of the fourth semester in the program.

Incoming students are encouraged to evaluate whether their proposed research.

direction and training needs fit into the areas of biological oceanography, marine physiology, quantitative marine ecology. As detailed in the biological oceanography handbook, these tracks are meant to guide curriculum development rather than being restrictive. Completion of specific track requirements is not strictly required, but students are expected to articulate how proposed deviations better satisfy their training requirements and maintain equal rigor.

At the end of their first year, the student and advisor should find a Joint Program faculty member who will agree to serve as the chair

of the student's general exam. The general exam consists of a research report that is completed by the end of third semester, and a thesis proposal defense that is completed by the end of the fourth semester.

To obtain the degree, students must complete mandatory coursework at MIT and WHOI, complete a research report, develop and defend a doctoral thesis proposal, and submit and defend an original theoretical or experimental research thesis. Upon successful completion of the Biological Oceanography discipline and thesis defense, the student is awarded the Doctor of Philosophy or Doctor of Science in the designated field of Biology, Civil and Environmental Engineering, or Earth, Atmospheric and Planetary Sciences.