

JOINT PROGRAM WITH WOODS HOLE OCEANOGRAPHIC INSTITUTION

Physical Oceanography

MIT and the Woods Hole Oceanographic Institute (WHOI) offer a Doctor of Philosophy (PhD) or Doctor of Science (ScD) in physical oceanography (<https://catalog.mit.edu/degree-charts/phd-physical-oceanography>); these degrees are awarded interchangeably. The Joint Program in Physical Oceanography prepares students to carry out independent and creative research in the field of physical oceanography, which includes the exploration and study of the physics and geography of ocean currents and water properties.

The goal of the Joint Program is to lay the foundation for scholarship and research and to allow the student to follow their individual interests. Students typically complete the doctoral degree in five years. Students are eligible for fellowships, scholarships, and research assistantships for the first five years; extension of research beyond the fifth year requires a petition by the student and principal advisor.

Each student entering the program is assigned two advisors, one from MIT and one from WHOI. One of these is the principal advisor, with whom the student begins their research work; the secondary advisor offers advice from the perspective of the other institution and is not required to advise in a scientific capacity. The initial assignment of advisors is made by the Joint Program before the student arrives for their first term and is based on the student's indicated scientific interests. In consultation with their advisors, the student must form a four-to-five-person thesis committee at least two months prior to their thesis proposal defense. The principal advisor serves as chair of this committee, which must feature at least one member from MIT and one member from WHOI. The committee must also include one member from the Joint Committee on Physical Oceanography (JCPO), unless the student petitions JCPO and is granted a waiver. Students are expected to meet with their thesis committee at least twice a year.

The general exam and associated foundational coursework should be completed by the end of the student's second year in the program. Students are encouraged to consult with their advisors to determine courses that best suit their research and interests. Students are expected to take 9–12 courses, which typically include four area-specific core courses, one math course, and 4–7 electives. Students may choose elective courses from the offerings of any MIT or WHOI department, with cross-registration available at Harvard. Focus areas include but are not limited to general physical oceanography, physical oceanography and climate, physical-biochemical interactions, and coastal/nearshore physical oceanography and engineering. It is expected that the student focus on research

during the summer and Independent Activities Period in January of each year.

The general exam qualifies the student for PhD research in the Joint Program and is typically taken after two years in the program. Students who enter the Joint Program with a related master's degree can request to take the exam earlier. The general exam includes formal reports describing two research projects, and an oral exam.

A doctoral thesis is required, including formal defense chaired by a faculty member who is not on thesis committee. This person is selected by the student in consultation with their advisor and must be approved by the Joint Program. In addition, students are expected to give a public seminar covering their thesis research or a substantial section of their thesis research; this seminar takes place about four months before the formal defense at the institution (MIT or WHOI) that is not hosting the formal defense.

After completing all requirements, students are awarded a Doctor of Philosophy or Doctor of Science in Physical Oceanography. Visit the MIT-WHOI Physical Oceanography website (<https://mit.who.edu/academics/fields/physical-oceanography>) for additional information on the doctoral program.