MIT and the Woods Hole Oceanographic Institution (WHOI) on Cape Cod offer joint doctoral degrees (http://mit.whoi.edu) in oceanography and doctoral, professional, and master's degrees in oceanographic engineering.

Graduate study in oceanography encompasses virtually all of the basic sciences as they apply to the marine environment: physics, chemistry, geology, geophysics, and biology. Applied ocean science and engineering allows for concentration in the major engineering fields of aeronautics and astronautics, civil and environmental, mechanical, and electrical engineering and computer science.

The faculty of MIT, together with the WHOI scientific staff, offer a wide variety of formal and informal subjects in various aspects of oceanography and areas directly applicable to ocean science and engineering; both faculties are equally involved in all levels of instruction. The subjects are supplemented by numerous seminars, directed studies, and cross-registration privileges with Harvard, Brown, and the Boston University Marine Program. Complete listings can be found in the subject descriptions of each individual department.

**Physical Oceanography**

Physical oceanography is the study of the physics of the ocean. Its central goal is to describe and explain the complex motions of the ocean. Principal research areas include general circulation, air-sea interaction, shelf dynamics, mesoscale processes, and small-scale processes. The Department of Earth, Atmospheric, and Planetary Sciences offers programs in physical oceanography with WHOI, which lead to the Doctor of Science or Doctor of Philosophy degree.

**Chemical Oceanography**

Chemical oceanographers study the chemical composition of the marine environment and the processes that have produced the present composition of sea water and sediments. Principal research areas include water column geochemistry, sedimentary geochemistry, seawater-basalt interactions, and atmospheric chemistry. The Department of Earth, Atmospheric, and Planetary Sciences and Civil and Environmental Engineering offer programs with WHOI in chemical oceanography and marine geochemistry. These programs lead to the Doctor of Science or Doctor of Philosophy.

**Marine Geology and Geophysics**

The goal of Marine Geology and Geophysics is to understand the physical and chemical processes that determine the structure and evolution of the ocean basins and their margins. Research is being conducted in a wide range of specialties including micropaleontology, paleoceanography, petrology and volcanic processes, seismology, gravity, magnetics, heat flow, sediment dynamics, and isotope geology. The Department of Earth, Atmospheric, and Planetary Sciences at MIT offers programs with
WHOI in marine geology and geophysics which lead to the Doctor of Science or Doctor of Philosophy.

**Biological Oceanography**

Biological oceanography seeks to describe and understand the biological processes which are active in the marine and bordering environments. The research of biological oceanographers is diverse, including ecology, toxicology, biochemistry, animal behavior and physiology, and molecular biology. The Department of Biology, and the Department of Earth, Atmospheric, and Planetary Sciences at MIT offers programs with WHOI in biological oceanography, and may involve research in other MIT departments such as the Department of Civil and Environmental Engineering. The programs lead to the Doctor of Science or Doctor of Philosophy.

**Applied Ocean Science and Engineering**

Applied ocean science and engineering involves the application of physics and the engineering sciences to the study of oceanic processes and the design of instruments, systems, and structures required to observe, measure, and work in the ocean. The Departments of Aeronautics and Astronautics, Civil and Environmental Engineering, Electrical Engineering and Computer Science, and Mechanical Engineering offer joint programs with WHOI in oceanographic engineering. The programs lead to the master's degree, engineer's degree, Doctor of Science, or Doctor of Philosophy.

**Inquiries**

Application for admission to the Joint Program in Oceanography and Applied Ocean Science and Engineering with the Woods Hole Oceanographic Institution (WHOI) should be made using the graduate application (https://gradapply.mit.edu/whoi). Requests for further information may be addressed to the MIT-WHOI Joint Program, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, 508-289-2225, or to the MIT Joint Program Office, Room 54-820, 617-253-7544. More information is available on the website (http://mit.whoi.edu).