OCEAN ENGINEERING (PH.D.)

https://ceps.unh.edu/ocean-engineering/program/phd/ocean-engineering

Description

Students admitted to the ocean engineering Ph.D. program come from traditional engineering degree programs including physics, mathematics, computer science, and in some cases, marine science programs. Those entering the Ph.D. program with a B.S. degree from an engineering program should be prepared to begin the Ph.D. program directly. Those coming from a B.S. in physics, mathematics, or computer science will have their transcripts more carefully reviewed on an individual basis, as additional courses may be required.

Requirements

Degree Requirement

The full course requirements below are for students entering with a relevant B.S. degree.

Students entering with a relevant M.S. degree with comparable content must take a minimum of six of the listed courses (exclusive of dissertation research and Ocean Seminars), of which at least three must be at the 900 level. Students entering with an M.S. must either take the listed core courses or demonstrate equivalent knowledge from other programs to be able to successfully pass the OE Ph.D. qualifying exam. As part of preparation for their research, students often take additional, dissertation-specific courses. Additional graduate courses may also be required based on recommendations by the supervisor or dissertation committee.

Code	Title	Credits
Core Courses		**2**
OE 990 & OE 991	Ocean Seminars I and Ocean Seminars II	
Select one of the following courses in oceanography or ocean science:		**3-4**
BIOL 855	Biological Oceanography	
ESCI 852	Chemical Oceanography	
ESCI 858	Introduction to Physical Oceanography	
ESCI 859	Geological Oceanography	
Complete the following core courses in ocean engineering:		**18**
ESCI 820	Ocean Measurements Lab	
OE 853	Ocean Hydrodynamics	
OE 854	Ocean Waves and Tides	
OE 864	Spectral Analysis of Geophysical Time Series Data	
OE 865	Underwater Acoustics	
Select two 900 level courses from the following list:		**6-8**
ME 910	Turbulence	
OE 965	Advanced Underwater Acoustics	
OE 972	Hydrographic Field Course	
OE 995	Graduate Special Topics	
Select two 800 or 900 level courses from MATH or IAM or select both:		**6-8**
ME 886	Introduction to Finite Element Analysis	
ME 986	Advanced Finite Element Analysis	
Select an additional two CEPS electives (one at the 800 level; one at the 900 level):		**6-8**
Total Credits		**41-48**

The general progress of a student through this program is expected to follow the time frame below:

- **Year 1:** Coursework
- **Year 2:** Coursework, qualifier by the end of the year, form graduate dissertation committee
- **Year 3:** Research, dissertation proposal defense
- **Year 4:** Research
- **Year 5:** Research, dissertation defense

The course selection and sequencing will be established in consultation with the student's guidance committee. There will be a qualifying examination on the core courses by the end of the second year. The goal of this exam is to test the breadth of a student's knowledge in topic areas essential to ocean engineering. A formal dissertation proposal defense will include a written proposal, a public presentation and an oral exam. After successful completion of the qualifying exam and dissertation proposal defense, the student will be advanced to candidacy. The dissertation will be defended in a public forum when completed.

Student Learning Outcomes

- Can conduct original research and develop new technologies in ocean engineering.
- Communicate research results through peer-reviewed publications and public presentations.