

# 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.

A student in the ocean engineering Ph.D. program will be expected to take a minimum of 12 courses (exclusive of dissertation research) beyond those required for a B.S. degree.

## Requirements

### Required Courses

Code	Title	Credits
<b>Select one of the following courses in oceanography or ocean science:</b>		<b>3-4</b>
ESCI #850	Biological Oceanography	
ESCI 852	Chemical Oceanography	
ESCI 858	Introduction to Physical Oceanography	
ESCI 859	Geological Oceanography	
<b>Complete the following core courses in ocean engineering:</b>		<b>18</b>
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	
<b>Select two 900 level courses from the following list:</b>		<b>6-8</b>
ME 910	Turbulence	
OE 965	Advanced Underwater Acoustics	
OE 972	Hydrographic Field Course	
OE 995	Graduate Special Topics	
<b>Select two 800 or 900 level courses from MATH or IAM or select both:</b>		<b>6-8</b>
ME 886	Introduction to Finite Element Analysis	
ME 986	Advanced Finite Element Analysis	
<b>Select an additional four CEPS electives (two at the 800 level; two at the 900 level):</b>		<b>12-16</b>

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

**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.