OCEANOGRAPHY (M.S.)

https://marine.unh.edu/program/degree-options-0

Description

The Oceanography (OCE) graduate program has a diverse set of faculty, staff, and students who examine ocean processes in broad fields of physical, biological, chemical, and geological oceanography and geophysics. Basic and applied research of an experimental, numerical, and analytical nature is conducted in oceanic settings that range from shallow nearshore and estuarine waters to the deep ocean and span all ocean basins on earth including the Arctic.

OCE offers programs leading to M.Sc. and Ph.D. degrees. These interdisciplinary programs prepare students for professional careers in ocean-related fields. In addition, students can also pursue an ocean mapping option within the Department of Earth Sciences and carried out within the Center for Coastal and Ocean Mapping.

Research and Facilities

The oceanography graduate program within the Department of Earth Sciences and the School of Marine Science and Ocean Engineering (SMSOE) is enhanced by the ocean engineering and marine biology graduate programs, and by other departments and institutes at UNH, including the civil and mechanical engineering and biology departments; the Institute for the Study of Earth, Oceans, and Space (EOS); the Center for Coastal and Ocean Mapping (CCOM); and the Ocean Processes Laboratory (OPAL). Other related programs include the N.H. Sea Grant Program, the Center for Collaborative Science, and the Atlantic Marine Aquaculture Center, Coastal Response Research Center (CRRC), Northeast Consortium (NEC), and the Piscataqua Region Estuaries Partnership (PREP). Oceanographic laboratories at UNH include the Shoals Marine Laboratory (SML) on Appledore Island, the Coastal Marine Laboratory (CML) in Newcastle, the Jackson Estuarine Laboratory (JEL) at Adams Point on the Great Bay, and the Chase Ocean Engineering Laboratory (COEL) on the main UNH campus. Additional laboratories for the oceanography faculty are located on campus in James, Morse, Rudman, and Spaulding Halls. The SMSOE operates a marine support facility and two UNH research vessels moored in Portsmouth Harbor at the UNH pier, the R/V Gulf Challenger and the R/V Gulf Surveyor, as well as a number of small boats. The SMSOE also supports the UNH Diving Program and oversees a shared use Instrumentation Pool for student and faculty use.

Requirements

M.S. Degree Requirements

Students must complete a minimum of 30 credits for the thesis option or 34 credits for the non-thesis option.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 997</td>
<td>Seminar in Earth Sciences</td>
<td>1</td>
</tr>
<tr>
<td>ESCI 998</td>
<td>Proposal Development</td>
<td>1</td>
</tr>
<tr>
<td>Select two of the following:</td>
<td></td>
<td>6-8</td>
</tr>
<tr>
<td>ESCI 850</td>
<td>Biological Oceanography</td>
<td></td>
</tr>
<tr>
<td>ESCI 852</td>
<td>Chemical Oceanography</td>
<td></td>
</tr>
</tbody>
</table>

ESCI 858 Introduction to Physical Oceanography
ESCI 859 Geological Oceanography

Select one of the following:

Thesis Option:

OCE 899 Master’s Thesis (acceptable to the thesis-examining committee and must pass a thesis defense)

Non-Thesis Option:

ESCI 898 Directed Research
or OCE 898 Directed Research

Other Relevant Graduate Courses

CEE 822 Introduction to Marine Pollution and Control
EOS #844 Biogeochemistry
EOS 895 Topics (Model & Anal. Biogeochem Cycles)
EOS 895 Topics (Climate & Fisheries)
EOS 896 Topics (Bio-Optics & Primary Production)
EOS 896 Topics (Dyn. of Global Marine Ecosystems)
ESCI 801 Quantitative Methods in Earth Sciences
ESCI 834 Geophysics
ESCI 841 Geochemistry
ESCI 845 Isotope Geochemistry
ESCI 847 Aqueous Geochemistry
ESCI 854 Sedimentology
ESCI 856 Geotectonics
ESCI 860 Paleooceanography
ESCI 862 Glacial Geology
ESCI 864 Spectral Analysis of Geophysical Time Series Data
ESCI 865 Paleoclimatology
ESCI 871 Geodesy and Positioning for Ocean Mapping
ESCI 874 Integrated Seabed Mapping Systems
ESCI 875 Fundamentals of Ocean Mapping II
ESCI 896 Topics (Nearshore Processes)
ESCI 972 Hydrographic Field Course
ESCI 994 Advanced Seminar (Ocean Seminar)
ESCI 995 Advanced Topics (Geophysical Fluid Dynamics)
ESCI 996 Advanced Topics (Ocean Modeling)
IAM 940 Asymptotic and Perturbation Methods
MATH 835 Statistical Methods for Research
MATH 839 Applied Regression Analysis
MATH 845 Foundations of Applied Mathematics I
MATH 846 Foundations of Applied Mathematics II
MATH 853 Introduction to Numerical Methods
ME 807 Analytical Fluid Dynamics
ME 812 Waves in Fluids
ME 909 Viscous Flow
MEFB 825 Marine Ecology
ME 910 Turbulence
OE 810 Ocean Measurements Laboratory
OE 853 Ocean Hydrodynamics
OE 854 Ocean Waves and Tides
OE 857 Coastal Engineering and Processes
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE 865</td>
<td>Underwater Acoustics</td>
</tr>
<tr>
<td>OE 995</td>
<td>Graduate Special Topics (Coastal Sediment Transport)</td>
</tr>
<tr>
<td>ZOOL 810</td>
<td>Ichthyology</td>
</tr>
<tr>
<td>ZOOL 872</td>
<td>Fisheries Biology</td>
</tr>
</tbody>
</table>

Total Credits: 30-34