EARTH SCIENCES: OCEAN MAPPING (M.S.)

https://ceps.unh.edu/earth-sciences/program/ms/ocean-mapping

Description

A degree option in Ocean Mapping is for students who wish to prepare for careers in such areas as federal and institutional marine research, federal and international positions in hydrographic surveying, the environment, private sector offshore mineral resources exploration industries, and marine hardware and software development. The study of ocean mapping is a key niche in the ocean technology field.

Hydrography, in the context of this program, is the measurement and definition of the configuration of the bottoms and adjacent land areas of oceans, lakes, rivers, harbors, and other water areas, and the tides (or water levels) and currents that occur in those bodies of water. It includes elements of both physical oceanography, and surveying and mapping. Ocean mapping is a broader concept that includes not only the elements of hydrography, but also encompasses such topics as the geologic characterization of the seabed and the mapping of living resources and habitats.

More information about CCOM (Center for Coastal and Ocean Mapping), which oversees this degree program, can be found at http://ccom.unh.edu/.

Requirements

Students in the thesis option must satisfactorily complete at least 30 graduate credits, which include the credits accumulated in the core curriculum. Students in this option must complete a master’s thesis (6 credits) and give an oral presentation of the results.

Students in the non-thesis option must satisfactorily complete at least 34 graduate credits, which includes the core curriculum, a 2-credit directed research project (ESCI 898 Directed Research), and a written and oral presentation of that research.

Ocean Mapping

The core curriculum for the option in ocean mapping normally includes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ESCI 858</td>
<td>Introduction to Physical Oceanography</td>
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<tr>
<td>ESCI 859</td>
<td>Geological Oceanography</td>
<td></td>
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<tr>
<td>ESCI 871</td>
<td>Geodesy and Positioning for Ocean Mapping</td>
<td></td>
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<tr>
<td>ESCI 872</td>
<td>Applied Tools for Ocean Mapping</td>
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<tr>
<td>ESCI 874</td>
<td>Integrated Seabed Mapping Systems</td>
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<tr>
<td>ESCI 875</td>
<td>Advanced Topics in Ocean Mapping</td>
<td></td>
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<tr>
<td>ESCI 972</td>
<td>Hydrographic Field Course</td>
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<tr>
<td>MATH 831</td>
<td>Mathematics for Geodesy</td>
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Required Courses:

- ESCI 997 Seminar in Earth Sciences (first year)
- ESCI 998 Proposal Development (first year)

Select Master’s Thesis or Directed Research:

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<th>Code</th>
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<tr>
<td>ESCI 899</td>
<td>Master’s Thesis</td>
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<tr>
<td>ESCI 898</td>
<td>Directed Research</td>
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Students may fulfill the Category A (professional) International Federation of Surveys/International Hydrographic Organization/International Cartographic Association (FIG/IHO) Standards of Competence for Hydrographic Surveyors by completing some additional specialized requirements. For more information, please visit the Center for Coastal and Ocean Mapping website, www.ccom.unh.edu (http://www.ccom.unh.edu).

Degree Plan

<table>
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<tr>
<th>Course</th>
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| First Year

**Fall**

- ESCI 872 Applied Tools for Ocean Mapping 2 credits
- ESCI 874 Integrated Seabed Mapping Systems 4 credits
- ESCI 997 Seminar in Earth Sciences 1 credit
- MATH 831 Mathematics for Geodesy 3 credits

**Spring**

- ESCI 871 Geodesy and Positioning for Ocean Mapping 4 credits
- ESCI 875 Advanced Topics in Ocean Mapping 4 credits
- ESCI 998 Proposal Development 1 credit

**Summer**

- ESCI 972 Hydrographic Field Course 4 credits

**Second Year**

**Fall**

- ESCI 858 Introduction to Physical Oceanography 3 credits
- ESCI 859 Geological Oceanography 4 credits
- ESCI 899 Master’s Thesis (or Elective for Directed Research Option) 3-4 credits

**Spring**

**Elective** 3-4 credits

- ESCI 899 Master’s Thesis for Directed Research 2 or 3 credits

**Total Credits** 38-41