PROGRAMS OF STUDY

Our educational program is inherently interdisciplinary:

Hydrography

In the context of our program, hydrography 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 these bodies of water. It includes elements of both physical oceanography and surveying and mapping.

Ocean Mapping

A broader concept that includes the elements of hydrography, ocean mapping also encompasses such topics as the geologic characterization of the seabed, mapping of water column targets (gas seeps, fish) and the mapping of living resources and habitats.

INTERDISCIPLINARY DEGREE PROGRAMS are provided through the Center and the respective academic departments of the College of Engineering and Physical Sciences. The University has been awarded recognition as a Category A hydrographic education program by the International Federation of Surveyors/International Hydrographic Organization (FIG/IHO).

Specific Programs Offered

- Ph.D. in Ocean Engineering
- Ph.D. in Earth Systems Science (Ocean Mapping Option)
- M.S. in Ocean Engineering (Ocean Mapping Option)
- M.S. in Earth Sciences (Ocean Mapping Option)
- Graduate Certificate Program
- FIG/IHO Category A Certification

Students come into the program with a variety of backgrounds, such as electrical/mechanical engineering, earth sciences, natural resources, ocean engineering, and computer sciences.

For more information about our programs, please visit **www.ccom.unh.edu**

For information on how to apply, please visit **www.gradschool.unh.edu**

University of New Hampshire

Center for Coastal and Ocean Mapping
NOAA/UNH Joint Hydrographic Center

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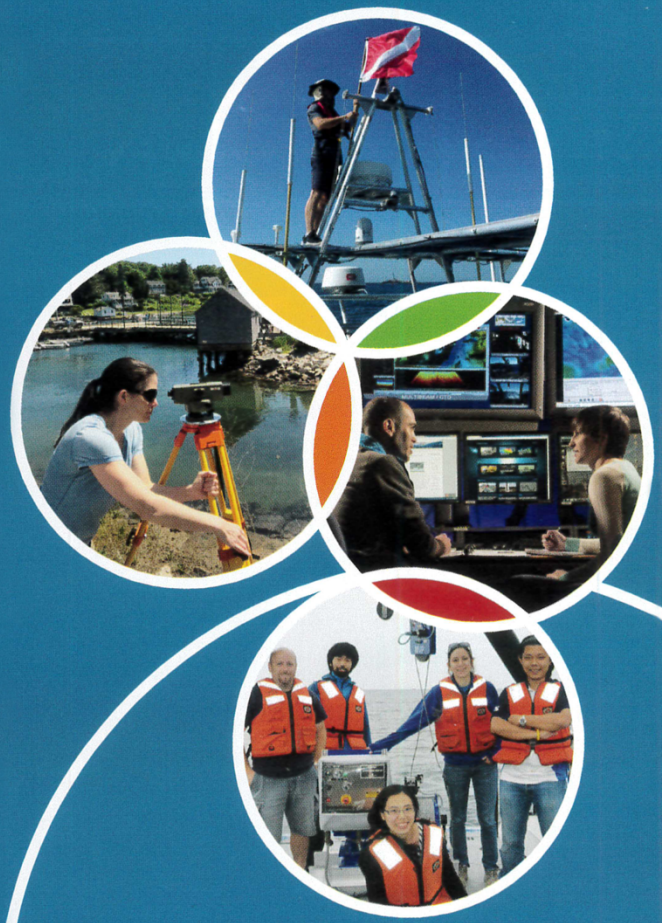
GRADUATE STUDIES IN OCEAN MAPPING

Explore the Ocean Chart Your Future

UNIVERSITY OF NEW HAMPSHIRE



Center for Coastal and Ocean Mapping
NOAA/UNH Joint Hydrographic Center

CCOM/JHC is a national center of expertise in ocean mapping and hydrographic sciences

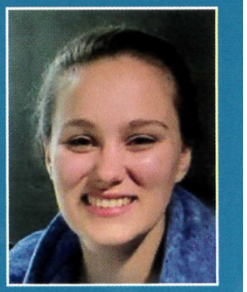
Why CCOM/JHC?

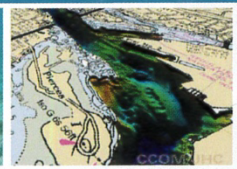
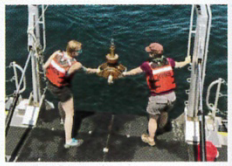
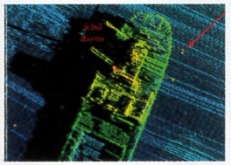
Graduate students get a solid foundation in acoustics, geodesy, marine geology, and software tools, mixed with hands-on field experience. Options are available in ocean, electrical or mechanical engineering, earth sciences, or computer sciences leading to an M.S. and/or a Ph.D.

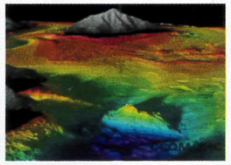
- We are one of only two internationally-certified centers for ocean mapping education in North America.
- Our faculty is made up of leading experts in diverse aspects of marine science, geodesy, and ocean mapping.
- We are dedicated to training the next generation of hydrographers and ocean mappers while carrying out leading-edge research.

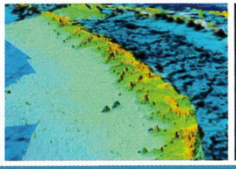
"There's no better place in the world to learn about ocean mapping than CCOM/JHC. The people you meet, the things you do, the material you learn, and the opportunities you are given directly set you up for success no matter your path."

- Cassie Bongiovanni, 2018
Mapping Coordinator
DSSV Pressure Drop / 5 Deeps








Get your feet wet!

CCOM/JHC offers unique opportunities for students to experience real world applications of research. Field work can take students to the shipwrecks of the Mediterranean, the central equatorial Pacific, the Atlantic margin, and far above the Arctic Circle. Closer to home, UNH's proximity to New Hampshire's 18 miles of seacoast and access to several research vessels provide ample opportunities for local research.

Students not only interact with their professors in the classroom and lab, but also find themselves working alongside these world-renowned researchers in the field.

With growing recognition of the importance of the Law of the Sea Treaty and the impact of climate change, mapping the ocean is more important than ever. It's a very exciting time to go to sea!



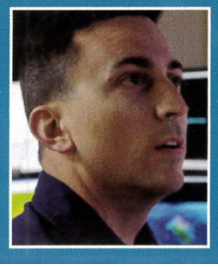
CCOM/JHC's Home

Located on the University of New Hampshire's West Campus, the Jere A. Chase Ocean Engineering Laboratory boasts state-of-the art technology. In 2017, new construction gave us six additional labs and an 84-seat amphitheater-style class/seminar room. Other facilities include a 20 ft. deep acoustic test tank, a 120 ft. long wave/tow tank, an electronics lab, a machine shop, a lidar simulator, and highbays for large-scale projects. A telepresence console, a Geowall high-resolution display system, a computer classroom, and computer labs are just some of the technologies the Center uses for research and instruction.

UNH's marine research pier at Fort Point in New Castle, NH provides berthing for UNH research vessels and easy access to the sea. Our research vessels, the cutting-edge R/V *Gulf Surveyor* and the nimble R/V *Cocheco*, provide platforms for research in Portsmouth Harbor and the waters off the New Hampshire coast. In addition, the pier is home port for the NOAA ocean mapping SWATH vessel, the *Ferdinand R. Hassler*.

The Data Visualization Research Lab conducts research into the problems of 4D-GIS, visualization of large information structures, 3D interactive techniques, multi-resolution rendering, database issues, and practical applications of virtual and augmented reality, as applied to ocean-related problems.

The Center's staff consists of teaching and research faculty, with an additional complement of research scientists and engineers whose expertise ranges from marine acoustics and deep-sea photo and video mosaicking to airborne lidar and 4D data visualization. Support staff includes a team of IT professionals, outreach specialists, and office administrators—all willing to work closely with our students.



"My time at CCOM/JHC was an exciting and challenging period of my life where I studied basic and advanced concepts of ocean mapping and hydrographic sciences in the classroom, lab, and in the field. The research being completed by field-experts alongside their students is cutting-edge and actively participating in the work was incredibly rewarding."

- LT John Kidd, 2017
Operations Officer
NOAA Ship Ferdinand R. Hassler