Understanding the oceans and our interactions with them is of increasing importance in this era of climate change, sea-level rise, fisheries crises, and the internationalization of the high seas. We encourage students to investigate our WaterWorld from the perspectives of the humanities, social sciences, and physical sciences. Maritime Studies is an interdisciplinary, cross-divisional program that includes the literature, history, policy issues, and science of the ocean. Candidates for the concentration in Maritime Studies must complete a minimum of seven courses: the interdisciplinary introductory course (Geosciences 104 Oceanography), four intermediate core courses (at Williams-Mystic), an elective, and the senior seminar.

Students who have completed other study-away programs that emphasize marine studies should consult with the program chair about the possibility of completing the Maritime Studies concentration.

REQUIRED COURSES:

Introductory course:

Maritime Studies 104(S) Oceanography

Core courses (Williams-Mystic at Mystic Seaport):

MAST 231(F,S) Literature of the Sea
MAST 311(F,S) Marine Ecology
MAST 351(F,S) Marine Policy
MAST 352(F,S) America and the Sea, 1600-Present

(NOTE: Students who take Maritime Studies 211 Oceanographic Processes at Mystic can substitute an extra elective in lieu of Geosciences 104)

Senior seminar:

MAST 402(F) Senior Seminar: Perspectives on Environmental Studies (Same as Environmental Studies 402)

Students can check with the program chair to see whether other courses not listed here might count as electives.

ELECTIVE COURSES:

Elective courses are listed based on either a clear maritime statement in the course description or broad practical/theoretical applicability to maritime studies. Concentrators will take a minimum of one course from the list below. If concentrators find other courses in the catalog that they believe meet the requirements for a MAST elective, they may bring them to the attention of the chair.

Maritime History

HIST 127 The Expansion of Europe
HIST/AFR 248 The Caribbean: From Slavery to Independence
HIST/JAPN/ASST 321 History of U.S.-Japan Relations
HIST/ASST/INST 391 When India was the World: Trade, Travel and History in the Indian Ocean

Maritime Literature

CLAS 101/COMP 107 The Trojan War

Marine Policy

ECON/ENVI 213 Introduction to Environmental and Natural Resources Economics
ECON 215/GBST 315 International Trade, Globalization and its Effects
ECON/ENVI 386/ECON 518 Environmental and Natural Resource Policy
ENVI 307/PSCI 317 Environmental Law
PSCI 223 International Law
PSCI 229 Global Political Economy

Marine Science

BIOL 414 Life at Extremes: Molecular Mechanisms
GEOS 212/BIOL 211 Paleobiology
GEOS/ENVI 215 Climate Changes
GEOS/ENVI/MAST 226 The Oceans and Climate
GEOS 302 Sedimentology
GEOS/ENVI/MAST 314 Sediment Records of Climate Change

HONORS PROGRAM IN MARITIME STUDIES

Candidates for honors in Maritime Studies will complete a thesis in their senior year. The project will involve original research (archive, museum, field, or laboratory) followed by on-campus analysis and write-up of results. This could be either a one-semester project, or a full year (two semesters plus winter study). In either case, data collection during the summer before the senior year may be necessary. In some cases, the thesis project may be a continuation and expansion of the student’s Williams-Mystic research project. Honors will be awarded if the thesis shows a high degree of scholarship, originality, and intellectual insight.

STUDY AWAY

You can find general study away guidelines for Maritime Studies here.

MAST 104(S) Oceanography
Crosslistings: GEOS 104/ENVI 104/MAST 104
Secondary Crosslistings
The oceans cover about 72% of Earth's surface, yet we know the surface of Venus better than our own ocean floors. Why is that? This integrated introduction to the oceans covers formation and history of the ocean basins; the composition and origin of seawater; currents, tides, and waves; ocean-atmosphere interactions; oceans and climate; deep-marine environments; coastal processes; productivity in the oceans; and human impacts. Coastal oceanography will be investigated on an all-day field trip, hosted by the Williams-Mystic program in Connecticut.

Class Format: lecture/discussion, three hours per week, laboratory, two hours per week in alternate weeks/one all-day field trip

Requirements/Evaluation: evaluation will be based on two hour exams, lab work, participation in the field trip, and a final exam

Extra Info: may not be taken on a pass/fail basis

Prerequisites: none

Enrollment Preferences: first-year and sophomore students

Enrollment Limit: 48

Expected Class Size: 48

Distributional Requirements:
Division 3

Other Attributes:
ENVI Natural World Electives
ENVS Group EB-B Electives
ENVS Group EG-A Electives
EXPE Experiential Education Courses

Spring 2016
LEC Section:  01 MWF 09:00 09:50  Instructor: Ronadh Cox

LAB Section:  02 M 01:00 03:00  Instructor: Ronadh Cox

LAB Section:  03 T 01:00 03:00  Instructor: Ronadh Cox

MAST 211(F,S) Oceanographic Processes
Crosslistings: MAST 211/GEOS 210

Primary Crosslisting
This course examines ocean and coastal environmental science issues including carbon dioxide and the ocean's role in climate, El Niño and other ocean-atmosphere oscillations that influence our weather, coastal erosion and other hazards, coastal pollution, and fisheries. The focus is on controlling processes with regional comparisons. Blue water oceanography is conducted in the Atlantic and comparative coastal oceanography includes trips to southern New England shores, and the West and Gulf coasts of the US as part of the Williams-Mystic program.

Class Format: lecture/laboratory, including coastal and near-shore field trips, 11 days offshore, and a laboratory or field research project

Requirements/Evaluation: two tests, a research project, and a presentation

Extra Info: offered only at Mystic Seaport

Distributional Requirements:
Division 3

Other Attributes:
ENVI Natural World Electives
ENVS Group EB-B Electives
ENVS Group EG-C Electives
EXPE Experiential Education Courses

Fall 2015
LEC Section:  01 TBA  Instructor: Lisa Gilbert

Spring 2016
LEC Section:  01 TBA  Instructor: Lisa Gilbert

MAST 226T The Oceans and Climate (W)
Crosslistings: GEOS 226/ENVI 226/MAST 226

Secondary Crosslisting
The oceans are a fundamental part of Earth's climate system. Ocean currents redistribute heat and water vapor around the globe, controlling temperature and precipitation patterns. Marine phytoplankton blooms and air-sea gas exchange modulate the atmospheric carbon dioxide concentration. The dynamic interaction of the atmosphere and the sea surface results in multi-year climate variations such as the El Niño-Southern Oscillation. This course will examine gradual and abrupt climate shifts from Earth's history and the ocean's role in driving, amplifying or dampening the changes, the ocean's response to anthropogenic greenhouse gas emissions, and the projected impacts of continued emissions and climate change on the ocean in the coming decades and millennia. We will analyze articles from the scientific literature that lay out the theory on the ocean's influence on climate, reconstruct past climate and ocean changes, test the mechanisms responsible for those changes, and with that knowledge, project the consequences of continued anthropogenic greenhouse gas emissions. Topics may include the climate effects of opening and closing seaways with plate tectonics, ocean feedbacks that amplify the intensity of ice ages, the instability of ocean circulation during ice-sheet retreat, the evolution of the El Niño-Southern Oscillation with changing carbon dioxide through the geologic past and the next century, ocean heat and carbon dioxide uptake during the last century and into the future, and the impact on sea level, seafloor methane reservoirs, ocean acidification, oxygenation and marine ecosystems.

Class Format: tutorial

Requirements/Evaluation: each student will write five 5-page position papers; evaluation based on the critical analysis of reading from the scientific literature through writing and discussion

Extra Info: may not be taken on a pass/fail basis

Prerequisites: GEOS 104, GEOS 210 or permission of instructor

Enrollment Preferences: sophomores and juniors

Enrollment Limit: 10

Expected Class Size: 10

Distributional Requirements:
Division 3

Writing Intensive

Other Attributes:
ENVI Natural World Electives
ENVS Group EB-B Electives
ENVS Group EG-C Electives
ENVS Group EG-B Electives
ENVS Group EG-C Electives
MAST Interdepartmental Electives

2
MAST 231(F,S) Literature of the Sea (W)

**Crosslistings:** MAST 231/ENGL 231

**Primary Crosslisting**

Taking advantage of our maritime museum, coastal setting, and three field seminars, we study canonical and lesser-known American novelists, travel writers, and poets who set their works in the watery world, often in the exact places where we travel as a class. We read, for example—depending on fall or spring semester—Hemingway when sailing on the Straits of Florida, Steinbeck when exploring Cannery Row on Monterey Bay, and Twain on a steamboat on the Mississippi. We read Rachel Carson beside the Mystic River estuary, Chopin on the sands of the Gulf of Mexico, Kipling out on Georges Bank, and Melville's masterpiece *Moby-Dick* aboard Mystic Seaport's historic whaleship, the *Charles W. Morgan*, a vessel nearly identical to the vessel he climbed aboard at age twenty-one. In the classroom we examine these works through a mixture of lecture, small-group discussion, and formal and creative writing. To further appreciation and analysis, this interdisciplinary course uses students' emerging knowledge of maritime history and marine science. Other authors and poets include, depending on fall or spring: Richard Henry Dana, Jr., Walt Whitman, Jack London, Joseph Conrad, T.S. Eliot, Langston Hughes, Elizabeth Bishop, Frederick Douglass, Timothy Egan, and Ursula K. Le Guin.

**Class Format:** small group tutorials with weekly lectures, including coastal and near-shore field trips, and 10 days at sea

**Requirements/Evaluation:** regular papers, class participation, journal-writing, and a final paper

**Extra Info:** offered only at Mystic Seaport

**Distributional Requirements:**

- Division 1
- Writing Intensive

**Other Attributes:**

- AMST Arts in Context Electives
- ENVI Humanities, Arts + Social Science Electives
- ENVP SC-B Group Electives

---

**Fall 2015**

LEC Section: 01 TBA  Instructor: Richard King

**Spring 2016**

LEC Section: 01 TBA  Instructor: Richard King

MAST 311(F,S) Marine Ecology

**Crosslistings:** MAST 311/BIOL 231

**Primary Crosslisting**

Using the principles of evolutionary biology and experimental ecology, this course examines the processes that control the diversity, abundance and distribution of marine organisms. Major marine communities, including estuaries, the rocky shore, sandy beaches, salt marshes, coral reefs, and the deep sea are discussed in detail.

**Class Format:** lecture/laboratory, including coastal and near-shore field trips, 10 days offshore, and a laboratory or field research project

**Requirements/Evaluation:** two tests, a research project, and a presentation

**Extra Info:** offered only at Mystic Seaport

**Prerequisites:** BIOL 101 or GEOS/MAST 104, or permission of instructor

**Distributional Requirements:**

- Division 3

**Other Attributes:**

- ENVI Natural World Electives
- ENVS Group EB-A Electives
- EXPE Experiential Education Courses

---

**Fall 2015**

LEC Section: 01 TBA  Instructor: James Carlton

**Spring 2016**

LEC Section: 01 TBA  Instructor: James Carlton

MAST 314(S) Sediment Records of Climate Change

**Crosslistings:** GEOS 314/MAST 314/ENVI 314

**Secondary Crosslisting**

Sediments and sedimentary rocks may appear unassuming but they are an extraordinarily rich archive of Earth's geologic history, including Earth's past climate. In the first half of this class, we will survey techniques of stratigraphic analysis and dating of sediments, including paleomagnetism, seismic stratigraphy, biozones, and radiocarbon methods. In the second half, we will survey the wide variety of methods for reconstructing past climate from sediments including the composition and texture of the sediment, the assemblage of fossils, and the elemental and isotopic chemistry of sediment components. These are used to reconstruct many climatic parameters from the past, including the temperature and salinity of seawater, atmospheric carbon dioxide concentration, ocean circulation, sea ice distribution, global terrestrial ice volume, terrestrial biomes, and in some cases, seasonal to interannual climate variability. In labs and independent projects, students will apply these tools to a collection of sediment samples spanning eight million years from the warm Miocene to the present collected from the Monterey Bay region by GEOS 25 during WSP. Students who register for this class are strongly encouraged to take GEOS 25, and are given enrollment preference in that course.

**Class Format:** lecture/lab

**Requirements/Evaluation:** evaluation based on weekly papers, discussions, and a research project

**Extra Info:** may not be taken on a pass/fail basis

**Prerequisites:** GEOS 104 or GEOS 210 or GEOS 215 or permission of instructor

**Enrollment Preferences:** Geosciences and Environmental Geosciences majors

**Enrollment Limit:** 10

**Expected Class Size:** 10

**Distributional Requirements:**

- Division 3

**Other Attributes:**

- ENVI Natural World Electives
- ENVS Group EB-B Electives
- ENVS Group EG-C Electives
- MAST Interdepartmental Electives

---

**Spring 2016**
LEC Section: 01 Cancelled

LAB Section: 02 Cancelled

MAST 351(F,S) Marine Policy
Crosslistings: MAST 351/ENVI 351/PSCI 319

Primary Crosslisting
This seminar utilizes the interdisciplinary background of the other Williams-Mystic courses to examine national and international contemporary issues in our relationship with ocean and coastal resources. This seminar takes a topical approach to the study of marine law and policy, examining fisheries, harbor development, coastal zone management, admiralty law, law of the sea, marine pollution, and shipping.

Class Format: lecture, discussions, guest lectures by active professionals, and includes coastal and near-shore field trips, and 10 days offshore

Requirements/Evaluation: an independent research paper, a presentation, and a final exam

Extra Info: offered only at Mystic Seaport

Dept. Notes: satisfies the Environmental Policy requirement for the Environmental Policy major and the Environmental studies concentration

Distributional Requirements:
Division 2

Other Attributes:
ENVI Environmental Policy
ENVP PTL Theory/Method Courses
ENVP PE-A Group Electives
ENVP PTL-A Group Electives
ENVP SC-A Group Electives
EXPE Experiential Education Courses
POEC International Political Economy Courses

Fall 2015
LEC Section: 01 TBA Instructor: Catherine Hall

Spring 2016
LEC Section: 01 TBA Instructor: Catherine Hall

MAST 352(F,S) America and the Sea, 1600-Present (W)
Crosslistings: MAST 352/HIST 352

Primary Crosslisting
This course focuses on the history of America's relationship to the sea from the age of discovery through the heyday of merchant sail to the triumph of steam and the challenges of the twentieth century. Readings in primary sources and secondary works on the social, economic, and diplomatic implications of maritime activities culminate in a research paper. Topics such as shipbuilding, whaling, and fisheries are studied through museum exhibits and artifacts in the material culture component of the course.

Class Format: lecture/discussion, including coastal and near-shore field trips, 10 days offshore, and an independent, primary source research paper

Requirements/Evaluation: an hour test, two papers, and a final exam Student papers will be a 5-page minimum and a 15-page minimum essay; the 15-page paper will be critiqued in three steps, as an outline, a draft, and a final paper, with attention to reasoning and style

Extra Info: offered only at Mystic Seaport

Prerequisites: BIOL 101 or GEOS/MAST 104, or permission of instructor

Distributional Requirements:
Division 2
Writing Intensive

Other Attributes:
AMST Space and Place Electives
ENVI Humanities, Arts + Social Science Electives
ENVP SC-B Group Electives
EXPE Experiential Education Courses
HIST Group F Electives - U.S. + Canada
HIST Group P Electives - Premodern

Fall 2015
LEC Section: 01 TBA Instructor: Glenn Gordinier

Spring 2016
LEC Section: 01 TBA Instructor: Glenn Gordinier

MAST 397(F) Independent Study: Maritime Studies

Class Format: independent study

Distributional Requirements:
Non-divisional

Fall 2015
IND Section: 01 TBA Instructor: Ronadh Cox

MAST 398(S) Independent Study: Maritime Studies

Class Format: independent study

Distributional Requirements:
Non-divisional

Spring 2016
IND Section: 01 TBA Instructor: Ronadh Cox

MAST 402(S) Senior Seminar: Perspectives on Environmental Studies
Crosslistings: ENVI 402/MAST 402

Secondary Crosslisting
The Environmental Studies and Maritime Studies programs provide students with an opportunity to explore the myriad ways in which humans interact with diverse environments at scales ranging from local to global. As the capstone course for Environmental Studies and Maritime Studies,
this seminar will bring together students who will have specialized in the humanities, social studies and/or the sciences and will provide an opportunity for exchange across these disciplinary streams. Readings and discussion will be organized around the common theme of climate change. Over the course of the seminar, students will develop a sustained independent research project on a topic of their choice.

**Class Format:** seminar

**Requirements/Evaluation:** evaluation is based on active participation, discussion leading, several smaller assignments and capstone project

**Extra Info:** may not be taken on a pass/fail basis; not available for the fifth course option

**Prerequisites:** ENVI 302 or MAST 351 Maritime Policy or permission of instructor

**Enrollment Preferences:** limited to senior Environmental Policy and Environmental Science majors and Environmental Studies and Maritime Studies concentrators

**Enrollment Limit:** 20

**Expected Class Size:** 19

**Dept. Notes:** required course for students wishing to complete the Environmental Policy & Environmental Science majors and the Environmental Studies or the Maritime Studies concentrations

**Distribution Notes:** no division 1, 2 or 3 credit

**Distributional Requirements:**

- Non-divisional

**Other Attributes:**
- ENVI Core Courses
- ENVP Core Courses
- ENVS Core Courses
- SCST Elective Courses

Spring 2016

SEM Section: 01 MR 01:10 02:25  Instructor: Pia Kohler

**MAST 493(F) Senior Thesis: Maritime Studies**

- Maritime Studies senior thesis.

**Class Format:** independent study

**Extra Info:** may not be taken on a pass/fail basis; not available for the fifth course option

**Distributional Requirements:**

- Non-divisional

Fall 2015

HON Section: 01 TBA  Instructor: Ronadh Cox

**MAST 494(S) Senior Thesis: Maritime Studies**

- Maritime Studies senior thesis.

**Class Format:** independent study

**Extra Info:** may not be taken on a pass/fail basis; not available for the fifth course option

**Distributional Requirements:**

- Non-divisional

Spring 2016

HON Section: 01 TBA  Instructor: Ronadh Cox