

# FIVE COLLEGE COASTAL & MARINE SCIENCES CERTIFICATE COURSES

Please look up courses in Five College Course Schedule for complete information,  
including sections, discussions, and labs

## ECOLOGY and BIODIVERSITY

SCHOOL	COURSE	TITLE
AC	BIOL 181	Adaptation and the Organism
AC	BIOL 230	Ecology
AC	BIOL 280/281	Animal Behavior
AC	BIOL 320	Evolutionary Biology
AC	BIOL 440	Conservation Biology
AC	BIOL 454	Seminar in Tropical Biology
AC	BIOL 464	Seminar in Morphology
AC	ENST 210	Ecology
AC	ENST 441	Conservation Biology
<b>AC</b>	<b>GEOL 107</b>	<b>Marine Environments</b>
AC	GEOL 251	Paleontology & Geobiology
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HC	CS 190	Animal Minds
HC	CS 216	Animal Behavior I ( <i>with marine paper</i> )
HC	CS 220	Animal Behavior II ( <i>with marine paper</i> )
HC	CS 239	Animal Behavior Theory
<b>HC</b>	<b>CS 259</b>	<b>Marine Mammals</b>
<b>HC</b>	<b>CS 260</b>	<b>Cognition in Whales and Dolphins</b>
<b>HC</b>	<b>CS 304</b>	<b>Cetacean Communication</b>
HC	NS 145	Earth and Life through Time
HC	NS 207	Ecology
HC	NS 267	Ecosystems Ecology
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MHC	BIOL 223	Ecology
MHC	BIOL 226	Evolution
MHC	BIOL 315	Behavioral Ecology
<b>MHC</b>	<b>BIOL 318</b>	<b>Aquatic Biology</b>
<b>MHC</b>	<b>BIOL 321BE</b>	<b>Inquiries in Behavioral Ecology (<i>only with marine project</i>)</b>
<b>MHC</b>	<b>BIOL 321CR</b>	<b>Coral Reefs in a Changing Climate</b>
MHC	BIOL 321ME	Molecular Ecology
MHC	BIOL 331	Conservation Biology
MHC	BIOL 337	Symbiotic Interactions
MHC	ENVST 335	Wetlands Ecology and Restoration ( <i>only with marine term paper</i> )
<b>MHC</b>	<b>GEOL 115</b>	<b>Emergence of Animals</b>
MHC	GEOL 224	Paleontology/Stratigraphy
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SC	BIO 130/131	Biodiversity, Ecology and Conservation
<b>SC</b>	<b>BIO 260/261</b>	<b>Invertebrate Diversity</b>
SC	BIO 266/67	Ecology: Principles and Applications
<b>SC</b>	<b>BIO 268/269</b>	<b>Marine Ecology</b>
SC	BIO 366	Biogeography
SC	BIO 371	Microbial Diversity Lab
<b>SC</b>	<b>BIO 390</b>	<b>Topics in Environmental Bio: Ecology of Coral Reefs</b>
SC	GEO 231	Invertebrate Paleontology and Paleocology

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**(ECOLOGY and BIODIVERSITY, continued)**

UM	<b>BIOLOGY 273</b>	<b>Biology of Marine Vertebrates</b> ( <i>not currently offered</i> )
UM	BIOLOGY 280	Evolution: Diversity of Life Thru Time
UM	BIOLOGY 287	Introductory Ecology
UM	<b>BIOLOGY 424</b>	<b>Marine Biology</b>
UM	BIOLOGY 487H	Tropical Field Biology
UM	BIOLOGY 540	Herpetology
UM	<b>BIOLOGY 542</b>	<b>Ichthyology</b> ( <i>not currently offered</i> )
UM	BIOLOGY 544	Ornithology
UM	BIOLOGY 548	Mammalogy
UM	BIOLOGY 550	Animal Behavior
UM	BIOLOGY 597G	Environmental Evolution
UM	<b>ECO 697 J</b>	<b>Ecology of Diadromous Fish</b>
UM	GEOLOGY 107H	Life's History and Biogeochemistry
UM	GEOLOGY 483	Environmental Evolution
UM	GEO-SCI 541	Paleoecology
UM	<b>GEO-SCI 591M</b>	<b>Marine Micropaleontology</b>
UM	<b>MICROBIO 494SI</b>	<b>A Sea of Microbes</b>
UM	NRC 252	Fundamentals of Applied Ecology
UM	NRC 390E	Evolution and Conservation
UM	NRC494GI	Global Change Ecology
UM	<b>NRC 570</b>	<b>Ecology of Fish</b>
UM	NRC 573	Behavioral Ecology and Conservation
UM	<b>NRC 590M</b>	<b>Marine Ecology</b>
UM	<b>NRC 590AE</b>	<b>Aquatic Ecology</b>
UM	NRC 597CB	Conservation and Animal Behavior

**GEOLOGY and CHEMISTRY**

SCHOOL	COURSE	TITLE
AC	<b>GEOL 105</b>	<b>Oceanography</b>
AC	GEOL 109	Climate Change, Global Warming, and Energy Resources
AC	GEOL 111	Planet Earth/Intro Geology
AC	GEOL 112	Surficial Earth Dynamics: Climate, Environment, and Life
AC	ENST/GEOL 301	Hydrogeology
AC	GEOL 311	Sediment & Stratigraphy
AC	GEOL 331	Paleoclimatology
AC	GEOL 351	Plate Tectonics: Integrated Geology and Geophysics
AC	GEOL 450	Seminar in Biogeochemistry
HC	NS 106	Earth Resources
HC	NS 126/326	Water in a Changing Climate
HC	NS 194	Geological Controversies
HC	NS 269	Geomorphology
MHC	GEOL 100	Physical Geology
MHC	GEOL 102	History of Life
<b>MHC</b>	<b>GEOL 103</b>	<b>Oceanography</b>
MHC	GEOL 107	Environmental Geology
MHC	GEOL 115	Climate Change
MHC	GEOL 202/334	History of the Earth
MHC	GEOL 203	Surface Processes/The Earth's Surface
MHC	GEOL 210	Plate Tectonics

**(GEOLOGY and CHEMISTRY, continued)**

MHC	GEOL 240	Geological Resources and the Environment
MHC	GEOL 326	Global Climate Change
MHC	GEOL 342	Plastics in the Environment ( <i>with marine paper</i> )
SC	CHM 346	Environmental Analytical Chemistry
SC	GEO 101	Introduction to Earth Processes and History
SC	GEO 104	Global Climate Change
SC	GEO 106	Extraordinary Events in History of Earth, Life & Climate
<b>SC</b>	<b>GEO 108</b>	<b>Oceanography</b>
SC	GEO 109	The Environment
<b>SC</b>	<b>GEO 232</b>	<b>Sedimentary Geology</b>
SC	GEO 251	Geomorphology
SC	GEO 334	Carbonate Sedimentology
SC	GEO 361	Tectonics and Earth History
UM	ENVIRSCI 504	Air Pollution & Climate Change Biology ( <i>only with marine term paper</i> )
UM	GEOGRAPH 110	Global Environmental Change
UM	GEOGRAPH 354	Climatology
UM	GEOGRAPH 595D	Oceans and Climate
UM	GEOLOGY 101/101H	The Earth
<b>UM</b>	<b>GEOLOGY 103/103H</b>	<b>Introductory Oceanography</b>
UM	GEOLOGY 201	History of the Earth
UM	GEOLOGY 285	Environmental Geology
UM	GEOLOGY 415	Introduction to Geochemistry
UM	GEOLOGY 445	Sedimentology
UM	GEOLOGY 485	Applied Environmental Geology
UM	GEO-SCI 517	Sedimentary Geochemistry
UM	GEO-SCI 519	Aqueous and Environmental Geochemistry
UM	GEO-SCI 531	Tectonics
<b>UM</b>	<b>GEO-SCI 557</b>	<b>Coastal Processes</b>
UM	GEO-SCI 558	Paleoclimatology
<b>UM</b>	<b>GEO-SCI 591P</b>	<b>Paleoceanography</b>
UM	GEO-SCI 591V	Volcanology
<b>UM</b>	<b>GEO-SCI 595D</b>	<b>Physical Oceanography</b>

**RESOURCE MANAGEMENT, POLICY, and SCIENTIFIC SKILLS**

SCHOOL	COURSE	TITLE
AC	ECON 111E/ENST 230	Intro to Econ with Environmental Applications
AC	ECON 210	Environmental/Natural Resource Economics
AC	ENST 260	Global Environmental Politics
<b>AC</b>	<b>ENST 430</b>	<b>Fisheries</b>
HC	CSI 267	Economics and Environment
HC	NS 157/357	Sustainable Water Resources
HC	NS 268	Intro to GIS and Natural Resource Management
HC	NS 365	Environmental Resources Seminar ( <i>only with marine project</i> )
MHC	BIOL 234	Biostatistics
MHC	ECON 219	Environmental Economics
MHC	ENVST 210	Political Ecology
MHC	ENVST 241	Environmental Issues
MHC	ENVST 304	Planning and the Environment

**(RESOURCE MANAGEMENT, POLICY, and SCIENTIFIC SKILLS)**

MHC	ENVST 316	Restoration Ecology
MHC	ENVST 341	Science/Power in Environmental Governance ( <i>only with marine case study</i> )
MHC	GEOG 204	Human Dimensions of Environmental Change
MHC	GEOG 205	Mapping and Spatial Analysis
MHC	GEOG 307	Remote Sensing
MHC	GEOG 321	Geographic Information Systems
MHC	HIST 364	Global Environmental History
MHC	IR 241	Global Resource Politics
MHC	POLIT 247	International Law and Org
MHC	POLIT 266	Environmental Politics in America
MHC	POLIT 387EV	Advanced Topics in Politics: US Environmental Politics and Policy

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SC	ECO 224	Environmental Economics
SC	ENV/GEO 150	Modeling Our World: Intro GIS
SC	GOV 243	International Law
SC	GOV 254	Politics of the Global Environment
SC	GOV 367et	Seminar: Topics in Political Theory: Environmental Political Theory

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UM	ECON 308	Political Economy of the Environment
UM	ENVIRSCI 214	Ecosystems, Biodiversity, & Global Change
UM	GEOGRAPH 497E	Geography, Policy and Environment
UM	GEOGRAPH 593WG	Water Geographies: Conflict & Sustainability
UM	GEOGRAPH 468/668	GIS and Spatial Analysis
UM	GEOGRAPH 593A	Aquatic Remote Sensing ( <i>counted as one of <b>BOLD</b> courses with marine project</i> )
UM	GEO-SCI 426/626	Remote Sensing
<b>UM</b>	<b>NRC 260</b>	<b>Fish Conservation and Management</b>
UM	NRC 409	Natural Resource Policy & Administration
UM	NRC 563	Wetlands, Wildlife Ecology & Management
<b>UM</b>	<b>NRC 570</b>	<b>Ecology of Fish</b>
<b>UM</b>	<b>NRC 571</b>	<b>Fisheries Science and Management &amp; Policy</b>
UM	NRC 573	Behavioral Ecology and Conservation
UM	NRC 576	Water Resources Management and Policy
UM	NRC 578	Watershed Science & Management
UM	NRC 585	Intro GIS
UM	NRC 597GC	Global Environmental Conservation
UM	NRC 590RE, 597RE, 566	Restoration Ecology
UM	NRC 597CB	Conservation and Animal Behavior
<b>UM</b>	<b>NRC 597SA</b>	<b>Sustainable Aquaculture</b>
UM	RES-ECON 262	Environmental Economics
UM	RES-ECON 263	Natural Resource Economics

\*\*\*Any GIS or remote sensing class not listed here can be used to fulfill this course category\*\*\*

**MHC BIOL 326 Ocean Blues: World Oceans**

This course counts as one of the three courses from “any category”

\*\*\*See next page for a detailed explanation of the course requirements\*\*\*

## Five College Coastal & Marine Sciences Certificate Course Requirements

- 1) **Six courses: one from each of the three** categories above. The remaining three courses can be selected from any category.
- 2) At least three of the six courses must be above introductory level, and in at least two fields of study (for example, cannot all be geology courses).
- 3) At least two courses in **bold** must be taken (**bold indicates that the course has a heavy concentration in coastal and marine sciences**). An introductory course in oceanography is required. Courses at study-away institutions may be applied to this and other Certificate course requirements (pre-approval is required; see below).
- 4) Students must receive a cumulative grade point average of 3.0 or better for all courses contributing to the Certificate requirements. (Advisors of Hampshire College students will determine the grade equivalents for courses, based on written evaluations supplied by course instructors.)

### Approval of Unlisted Courses

The student must present the Five College Coastal & Marine Sciences Program Coordinator with a course description and syllabus. Course approval is at the discretion of the FCCMS Steering Committee. This procedure applies to all courses taken through academic off-campus programs and transfer credits from other institutions, as well as Five College courses that are not posted on the FCCMS course list (above).