

**Attachment 1**  
**FIVE COLLEGE COASTAL & MARINE SCIENCES**  
**Certificate Courses**

Master list: These courses are not all offered every semester or every year

**Five College Coastal & Marine Sciences Certificate Course Requirements**

**Six courses** in total are required.

1) One course in Oceanography from the list below

2) Two courses **one from each of the** categories below

ECOLOGY and BIODIVERSITY

RESOURCE MANAGEMENT, POLICY, and SCIENTIFIC SKILLS

3) The remaining three courses can be from any of the above two categories OR GEOLOGY and CHEMISTRY below

4) At least two courses with a heavy concentration in coastal and marine sciences (bolded in the lists below)

5) Courses at transfer or study-away institutions may be applied to this and other Certificate course requirements (pre-approval is required; see below).

6) 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. Students can submit course approvals with this [Google Form](#). Course approval is at the discretion of the FCCMS Steering Committee. This procedure applies to all courses taken through academic off-campus programs, study abroad programs, and transfer credits from other institutions, as well as Five College courses that are not posted on the FCCMS course list (below).

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

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

## **OCEANOGRAPHY**

### **SCHOOL COURSE TITLE**

AC GEOL 105 Introduction to Oceanography  
MHC GEOL 226 Oceanography & Marine Science  
SC GEO 108 Oceanography  
UM GEOLOGY 103/103H Introductory Oceanography

## **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 312 Ecosystems Ecology  
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 310 Ecosystems Ecology  
AC ENST 441 Conservation Biology  
AC GEOL 251 Paleontology & Geobiology

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HC CS 0179 Animal Behavior (*with marine paper*)  
HC CS 0190 Animal Minds  
HC CS 0216 Animal Behavior I (*with marine paper*)  
HC CS 0220 Animal Behavior II (*with marine paper*)  
HC CS 0239 Animal Behavior Theory (*with marine paper*)  
HC NS 0145 Earth and Life through Time  
HC NS 0207 Ecology  
HC NS 0267 Ecosystems Ecology

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MHC BIOL 145 EX Intro Biology: Exploring Biodiversity  
MHC BIOL 223 Ecology  
MHC BIOL 226 Evolution  
MHC BIOL 315 Behavioral Ecology  
MHC BIOL 321BE Inquiries in Behavioral Ecology (*with marine project*)  
**MHC BIOL 321CR Coral Reefs in a Changing Climate**  
MHC BIOL 321ME Molecular Ecology  
MHC BIOL 321TH Ornithology  
MHC BIOL 331 Conservation Biology  
MHC ENVST 335 Wetlands Ecology and Restoration (*with marine paper*)  
MHC BIOL 337 Symbiotic Interactions  
**MHC GEOL 115 Emergence of Animals**  
MHC GEOL 224 Paleontology/Stratigraphy  
**(ECOLOGY and BIODIVERSITY, continued)**

**SC BIO 130/131 Biodiversity, Ecology and Conservation**

**SC BIO 260/261 Invertebrate Diversity**

SC BIO 266/267 Ecology: Principles and Applications

**SC BIO 268/269 Marine Ecology**

SC BIO 366 Biogeography

SC BIO 371 Microbial Diversity Lab

**SC BIO 390cr Topics in Environmental Biology: Ecology of Coral Reefs**

SC BIO 390cb Topics in Environmental Biology: Investigations in Conservation Biology

SC GEO 231 Invertebrate Paleontology and Paleoecology

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**UM BIOLOGY 273 Biology of Marine Vertebrates** (*not currently offered*)

UM ENVIRSCI 214 Ecosystems, Biodiversity, & Global Change

UM NRC 360 Evolution and Conservation

UM BIOLOGY 280 Evolution: Diversity of Life Thru Time

UM BIOLOGY 287 Introductory Ecology

**UM BIOLOGY 424 Marine Biology**

UM BIOLOGY 487H Tropical Field Biology

UM BIOLOGY 540 Herpetology

**UM BIOLOGY 542 Ichthyology** (*not currently offered*)

UM BIOLOGY 544 Ornithology

UM BIOLOGY 548 Mammalogy

UM BIOLOGY 550 Animal Behavior

UM BIOLOGY 597G Environmental Evolution

**UM ECO 697 J Ecology of Diadromous Fish**

UM ENVIRSCI 214 Ecology, Biodiversity, and Global Change

UM GEOLOGY 107H Life's History and Biogeochemistry

UM GEOLOGY 483 Environmental Evolution

UM GEO-SCI 541 Paleoecology

**UM MICROBIO 494SI A Sea of Microbes**

UM NRC 252 Fundamentals of Applied Ecology

UM NRC 360 (390E) Evolution and Conservation

UM NRC 494GI Global Change Ecology

**UM NRC 545 Marine Ecology**

UM NRC 560 (590AE) Aquatic Ecology

**UM NRC 570 Ecology of Fish**

UM NRC 573 Behavioral Ecology and Conservation

UM NRC 584 Ecophysiology

**UM NRC 590STA Vertebrate Ecology**

UM NRC 597CB Conservation and Animal Behavior

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

### **SCHOOL COURSE TITLE**

AC ECON 111E/ENST 230 Intro to Econ with Environmental Applications

AC ENST 250 US Environmental Policy

AC ENST 260 Global Environmental Politics

**AC ENST 430 Fisheries**

AC GEOL 253/ENST 253: Principles of Geospatial Inquiry

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HC CSI 0267 Economics and Environment

HC NS 0127 Tackling Climate Change

HC NS 0132 Wetlands and Water Treatment  
HC NS 0157/0357 Sustainable Water Resources  
HC NS 0240 Intro Statistics  
HC NS 0268 Intro to GIS and Natural Resource Management  
HC NS 0365 Environmental Resources Seminar (*with marine project*)

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MHC BIOL 234 Biostatistics

**MHC BIOL 321CR Coral Reefs in a Changing Climate**

MHC ECON 219 Environmental Economics  
MHC ENVST 210 Political Ecology  
MHC ENVST 241 Environmental Issues  
MHC ENVST 304 Planning and the Environment  
MHC ENVST 316 Restoration Ecology  
MHC ENVST 346 Global Inequality, Smart Earth Tech & Env. (*with marine case study*)  
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 GEOL 342CC Global Effects of Climate Change  
MHC HIST 364 Global Environmental History  
MHC POLIT 247 International Law and Organization  
MHC POLIT 266 Environmental Politics in America  
MHC POLIT 387EV Advanced Topics in Politics: US Environmental Politics and Policy

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SC BIO 390cb Topics in Environmental Biology: Investigations in Conservation Biology  
SC ECO 224 Environmental Economics  
SC ENV/GEO 150 Modeling Our World: Intro GIS  
SC ENV 201/202 Researching Environmental Problems (*with marine project*)  
SC ENV 326 Seminar: Environmental Justice and Natural Resource Management  
SC GOV 243 International Law  
SC GOV 254 Politics of the Global Environment  
SC GOV 347es Seminar: Topics in Int. Politics/Comp. Politics: Environmental Security  
SC GOV 367et Seminar: Topics in Political Theory: Environmental Political Theory

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UM BIOLOGY 422 Field Ecology

**UM ECO 697RF Recreational Fisheries Science and Conservation**

UM ECON 308 Political Economy of the Environment  
UM GEOGRAPH 426 Remote Sensing  
UM GEOGRAPH 497E Geography, Policy and Environment  
UM GEOGRAPH 593WG Water Geographies: Conflict & Sustainability

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

UM GEOGRAPH 468 GIS and Spatial Analysis  
UM GEOGRAPH 593A Aquatic Remote Sensing (*counted as one of **BOLD** courses with marine project*)  
UM NRC 240 Quantitative Ecology  
**UM NRC 260 Fish Conservation and Management**  
UM NRC 309 Natural Resource Policy & Administration  
UM NRC 563 Wetlands, Wildlife Ecology & Management  
UM NRC 566 Restoration Ecology  
**UM NRC 570 Ecology of Fish**  
**UM NRC 571 Fisheries Science and Management & Policy**

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 590D Marine Conservation and Policy**

UM NRC 590IE Invasion Ecology  
UM NRC 597GC Global Environmental Conservation  
UM NRC 597CB Conservation and Animal Behavior

**UM NRC 597SA Sustainable Aquaculture**

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\*\*\***

## **GEOLOGY and CHEMISTRY**

### **SCHOOL COURSE TITLE**

**AC GEOL 105 Introduction to Oceanography**

AC GEOL 109 Climate Change: Science and Rhetoric  
AC GEOL 111 Planet Earth (Intro Geology)  
AC GEOL 112 Surficial Earth Dynamics: Climate, Environment, and Life  
AC GEOL 301 Hydrogeology  
AC GEOL 311/ENST 301 Sedimentology & Stratigraphy  
AC GEOL 331 Climate Dynamics

**(GEOLOGY and CHEMISTRY, continued)**

AC GEOL 401 Plate Tectonics and Continental Dynamics  
AC GEOL 450 Seminar in Biogeochemistry

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HC NS 0106 Earth Resources  
HC NS 0126/0326 Water in a Changing Climate  
HC NS 0194 Geological Controversies  
HC NS 0269 Geomorphology

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MHC GEOG-205 Mapping and Spatial Analysis  
MHC GEOG-224 Atmosphere and Weather  
MHC GEOG-321 Advanced GIS  
MHC GEOL-104 (also cross-listed with GEOG) Introduction to Geology and Physical Geography (many topics)  
MHC GEOL-201 Rocks & Minerals  
**MHC GEOL-226 Oceanography & Marine Science**  
MHC GEOL-334 Historical Geology  
MHC GEOL-342PC Seminar: Paleoclimatology

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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  
**SC GEO 108 Oceanography**  
**SC GEO 232 Sedimentary Geology**  
SC GEO 251 Geomorphology  
SC GEO 334 Carbonate Sedimentology  
SC GEO 361 Tectonics

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UM ENVIRSCI 504 Air Pollution & Climate Change Biology

UM GEOGRAPH 110 Global Environmental Change

UM GEOGRAPH 354 Climate Dynamics (Climatology)

**UM GEOGRAPH 595D Oceans and Climate**

UM GEOLOGY 101/101H The Earth

**UM GEOLOGY 103/103H Introductory Oceanography**

UM GEOLOGY 391LI Earth History: Life, Climate, and Environment

UM GEOLOGY 285 Environmental Geology

**UM GEOLOGY 394LI Earth History: Life, Climate, Environment** (optional 1-credit lab = Geol 351 Skills and Methods in Earth History)

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

**UM GEO-SCI 557 Coastal Processes**

UM GEO-SCI 558 Paleoclimatology

UM GEO-SCI 563 Glacial Geology

**UM GEO-SCI 559 Paleoceanography**

UM GEO-SCI 591V Volcanology

**UM GEO-SCI 595D Physical Oceanography**