

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

HC STEM Animal Behavior Theory (*with marine paper*)
HC STEM Animal Behavior Research Methods (*with marine paper*)
HC STEM 2001 Underwater Animal Behavior
HC CS 0113 Animal Migrations (*with marine project*)
HC CS 0190 Animal Minds
HC NS 0145 Earth and Life through Time
HC NS 0207 Ecology
HC NS 0267 Ecosystems Ecology

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

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

HC CS 0211 Coastal Resilience, Climate Change, and Socio-Ecological Perspectives

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*)

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

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

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

HC NS 0106 Earth Resources

HC NS 0126/0326 Water in a Changing Climate

HC NS 0194 Geological Controversies

HC NS 0269 Geomorphology

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

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

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