

Attachment 1
FIVE COLLEGE COASTAL & MARINE SCIENCES
Certificate Courses

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

MHC BIOL 326 Ocean Blues: World Oceans

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

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 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

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 560 (590AE) Aquatic Ecology

UM NRC 570 Ecology of Fish

UM NRC 573 Behavioral Ecology and Conservation
UM NRC 584 Ecophysiology

UM NRC 590M Marine Ecology

UM NRC 590STA Vertebrate Ecology

UM NRC 597CB Conservation and Animal Behavior

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 109 The Environment
SC GEO 232 Sedimentary Geology
SC GEO 251 Geomorphology
SC GEO 334 Carbonate Sedimentology
SC GEO 361 Tectonics and Earth History

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

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 250 US Environmental Policy
AC ENST 260 Global Environmental Politics
AC ENST 430 Fisheries
AC GEOL 253/ENST 253: Principles of Geospatial Inquiry

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*****

Five College Coastal & Marine Sciences Certificate Course Requirements

1) **Six courses: one from each of the three categories above. The GEOLOGY/CHEMISTRY category will be fulfilled by taking Oceanography.** 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 biology 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**). A course in oceanography is required, and will serve as one of the courses in bold.

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, study abroad programs, and transfer credits from other institutions, as well as Five College courses that are not posted on the FCCMS course list (above).