

Attachment 1
FIVE COLLEGE COASTAL & MARINE SCIENCES
Certificate Courses

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

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 107	Marine Environments
AC	GEOL 251	Paleontology & Geobiology

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HC	CS 0179	Animal Behavior (<i>with marine paper</i>)
HC	CS 0190	Animal Minds
HC	CS 0216	Animal Behavior I (<i>with marine paper</i>)
HC	CS 0220	Animal Behavior II (<i>with marine paper</i>)
HC	CS 0239	Animal Behavior Theory (<i>with marine paper</i>)
HC	CS 0259	Marine Mammals
HC	CS 0260	Cognition in Whales and Dolphins
HC	CS 0304	Cetacean Communication
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 145 MB	Intro Biology: Marine Organismal Biology
MHC	BIOL 223	Ecology
MHC	BIOL 226	Evolution
MHC	BIOL 315	Behavioral Ecology
MHC	BIOL 318	Aquatic Biology
MHC	BIOL 321BE	Inquiries in Behavioral Ecology (<i>with marine project</i>)
MHC	BIOL 321CR	Coral Reefs in a Changing Climate
MHC	BIOL 321ME	Molecular Ecology
MHC	BIOL 321MR	Marine Invertebrate Ecophysiology
MHC	BIOL 321TH	Ornithology
MHC	BIOL 331	Conservation Biology
MHC	ENVST 335	Wetlands Ecology and Restoration (<i>with marine paper</i>)
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 (<i>not currently offered</i>)
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 (<i>not currently offered</i>)
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	GEO-SCI 591M	Marine Micropaleontology
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	Oceanography
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	GEOL 301	Hydrogeology
AC	GEOL 311/ENST 301	Sediment & Stratigraphy
AC	GEOL 331	Climate Dynamics

(GEOLOGY and CHEMISTRY, continued)

AC	GEOL 351	Plate Tectonics: Integrated Geology and Geophysics
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	GEOL 100	Physical Geology
MHC	GEOL 102	History of Life
MHC	GEOL 103	Oceanography
MHC	GEOL 107	Environmental Geology
MHC	GEOL 202	History of the Earth
MHC	GEOL 203	The Earth's Surface (Surface Processes)
MHC	GEOL 210	Plate Tectonics
MHC	GEOL 240	Geological Resources and the Environment
MHC	GEOL 326	Climate Change: Polar Places (Global Climate Change)
MHC	GEOL 342PE	Plastics in the Environment
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 201	History of the Earth
UM	GEOLOGY 285	Environmental Geology
UM	GEOLOGY 394LI	Earth History: Life, Climate, Environment
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 591P	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
HC	CS 0237	Hurting to Extinction: Whales in Crisis
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 (<i>with marine project</i>)
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. (<i>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	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 (<i>with marine project</i>)
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	ENVIRSCI 214	Ecosystems, Biodiversity, & Global Change
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 (<i>counted as one of BOLD courses with marine project</i>)
UM	NRC 240	Quantitative Ecology
UM	NRC 260	Fish Conservation and Management
UM	NRC 309	Natural Resource Policy & Administration
UM	NRC 360	Evolution and Conservation
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

MHC BIOL 326 Ocean Blues: World Oceans

This course counts as one of the three courses from “any 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 and transfer credits from other institutions, as well as Five College courses that are not posted on the FCCMS course list (above).