

FIVE COLLEGE COASTAL & MARINE SCIENCES CERTIFICATE COURSES

MARINE 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 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
AC	GEOL 107	Marine Environments
AC	GEOL 251	Paleontology & Geobiology
HC	CS 216	Animal Behavior I (<i>with marine paper</i>)
HC	CS 220	Animal Behavior II (<i>with marine paper</i>)
HC	CS 259	Marine Mammals
HC	NS 207	Ecology
HC	NS 267	Ecosystems Ecology
MHC	BIOL 223	Ecology
MHC	BIOL 310	Invertebrate Zoology
MHC	BIOL 315	Behavioral Ecology
MHC	BIOL 318	Aquatic Biology
MHC	BIOL 321C	Marine Conservation Biology
MHC	BIOL 331	Conservation Biology
MHC	BIOL 337	Symbiotic Interactions
MHC	ENVST 321D	Marine Conservation Biology
MHC	ENVST 335	Wetlands Ecology and Restoration (<i>only with marine term paper</i>)
MHC	GEOL 115	Emergence of Animals
MHC	GEOL 224	Paleontology/Stratigraphy
SC	BIO 130/131	Biodiversity, Ecology and Conservation
SC	BIO 260/261	Invertebrate Diversity
SC	BIO 268/269	Marine Ecology
SC	BIO 364/365	Plant Ecology
SC	BIO 366	Biogeography
SC	BIO 390	Topics in Environmental Bio: Ecology of Coral Reefs
SC	GEO 231	Invertebrate Paleontology and Paleoecology
UM	BIOLOGY 273	Biology of Marine Vertebrates
UM	BIOLOGY 280	Evolution: Diversity of Life Thru Time
UM	BIOLOGY 287	Introductory Ecology
UM	BIOLOGY 487H	Tropical Field Biology
UM	BIOLOGY 540	Herpetology
UM	BIOLOGY 542	Ichthyology
UM	BIOLOGY 544	Ornithology
UM	BIOLOGY 548	Mammalogy
UM	BIOLOGY 550	Animal Behavior
UM	BIOLOGY 596Z	Amazon Aquatic Ecology
UM	BIOLOGY 597G	Environmental Evolution
UM	ECO 697 J	Ecology of Diadromous Fish
UM	GEOLOGY 107H	Life's History and Biogeochemistry
UM	GEOLOGY 190BH	Biological Oceanography
UM	GEOLOGY 483	Environmental Evolution
UM	GEO-SCI 541	Paleoecology

(Marine Ecology and Biodiversity category continued)

UM	GEO-SCI 591M	Marine Micropaleontology
UM	MICROBIO 494SI	A Sea of Microbes
UM	NRC 252	Intro Ecology
UM	NRC 570	Ecology of Fish
UM	NRC 597AE	Aquatic 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
AC	GEOL 111	Principles of Geology
AC	GEOL 121	Surface Earth Dynamics
AC	GEOL 301	Hydrogeology
AC	GEOL 311	Sediment & Stratigraphy
AC	GEOL 331	Paleoclimatology
AC	GEOL 340	Sedimentology & Stratigraphy
AC	GEOL 450	<u>Seminar in Biogeochemistry</u>
HC	NS 106	Earth Resources
HC	NS 126/326	Water in a Changing Climate
HC	NS 194	Geological Controversies
HC	NS 195	Pollution and Our Environment
HC	NS 211	Climate Change: Exploring the Science and Solutions
HC	NS 255	Watershed Hydrology (<i>prior to F 2017 only</i>)
HC	NS 269	Geomorphology
HC	NS 366	<u>Environmental Chemistry</u>
MHC	GEOL 100	Physical Geology
MHC	GEOL 107	Environmental Geology
MHC	GEOL 102	History of Life
MHC	GEOL 103	Oceanography
MHC	GEOL 115	Climate Change
MHC	GEOL 202/334	History of the Earth
MHC	GEOL 203	Surface Processes
MHC	GEOL 210	Plate Tectonics
MHC	GEOL 240	Geological Resources and the Environment
MHC	GEOL 326	<u>Global Climate Change</u>
SC	CHM 346	Environmental Analytical Chemistry
SC	ENV 108	Environmental 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 334	Carbonate Sedimentology
SC	GEO 361	<u>Tectonics and Earth History</u>
UM	ENVIRSCI 504	Air Pollution & Climate Change Biology (<i>only with marine term paper</i>)
UM	GEOGRAPH 100	Global Environmental Change
UM	GEOGRAPH 354	Climatology
UM	GEOGRAPH 560	Geomorphology
UM	GEOGRAPH 595D	Oceans and Climate
UM	GEOLOGY 101	The Earth
UM	GEOLOGY 103/103H	Introductory Oceanography
UM	GEOLOGY 201	History of the Earth
UM	GEOLOGY 285	Environmental Geology

(Geology and Chemistry category continued)

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 <https://www.fivecolleges.edu/system/files/FCCMS%20Complete%20course%20list%20March%201%2C%202017.pdf>

UM	GEO-SCI 557	Coastal Processes
UM	GEO-SCI 591P	Paleoceanography
UM	GEO-SCI 591V	Volcanology
UM	GEO-SCI 595D	Physical Oceanography

RESOURCE MANAGEMENT AND POLICY

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
AC	ENST 430	Fisheries
HC	CS 261	Oceans of Change
HC	CSI 267	Economics and Environment
HC	NS 107	Sustainable Living
HC	NS 157/357	Sustainable Water Resources
HC	NS 268	Intro to GIS and Natural Resource Management
HC	NS 365	<u>Environmental Resources Seminar (<i>only with marine project</i>)</u>
MHC	ECON 203	Environmental Economics
MHC	ENVST 241	Environmental Issues
MHC	ENVST 304	Planning and the Environment
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	<u>Environmental Politics in America</u>
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	PPL 220	Public Policy Analysis
SC	PPL 222	<u>US Environmental History & Policy</u>
UM	CE-ENGIN 561	Open Channel Flow
UM	CE-ENGIN 565	Environmental Institutions & Policies
UM	CE-ENGIN 597F	Design of Fish Passage Facilities
UM	ECON 308	Political Economy of the Environment
UM	ENVIRSCI 214	Ecosystems, Biodiversity, & Global Change
UM	GEOGRAPH 497E	Geography, Policy and Environment
UM	GEOGRAPH 397	Water Geographies: Conflict & Sustainability
UM	GEOGRAPH 593A	Aquatic Remote Sensing (<i>counted as one of BOLD courses with marine project</i>)

NEW COURSE REQUIREMENTS: Updated March 31, 2017 www.fivecolleges.edu/marine

UM	GEO-SCI 426/626	Remote Sensing
UM	GEO-SCI 468/668	GIS and Spatial Analysis
(Resource Management and Policy category continued)		
UM	NRC 260	Fish Conservation and Management
UM	NRC 261	Wildlife Conservation (<i>prior to S '15 only</i>)
UM	NRC 409	Natural Resource Policy & Administration
UM	NRC 563	Wetlands, Wildlife Ecology & Management
UM	NRC 570	Ecology of Fish
UM	NRC 571	Fisheries Science and Management & Policy
UM	NRC 576	Water Resources Management and Policy
UM	NRC 578	Watershed Science & Management
UM	NRC 585	Remote Sensing
UM	NRC 597GC	Global Environmental Conservation
UM	NRC 590RE (597RE)	Restoration Ecology
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 fulfil this course category.

FCCMS Capstone Course:

MHC BIOL 326 Ocean Blues: World Oceans

This course counts as one of the three courses from “any category” (after Fall '14, it cannot be used to fulfill a specific course category).

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 strongly recommended. 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).