

ENVIRONMENTAL SCIENCE
(Effective with the Class of 2013 and after)

Minimum courses required: 15

Students must complete an internship or independent research project. Internships must be approved by Professor Scott Shumway, Program Coordinator, prior to January of the senior year.

<u>Course requirement</u>	<u>Semester Taken</u>
---------------------------	-----------------------

Core courses required for all Environmental Science majors:

- | | | |
|----|--------------------------------|-------|
| 1. | BIO 111: Evolution and Ecology | _____ |
| 2. | BIO 201: Environmental Science | _____ |
| 3. | CHEM 153: Chemical Principles | _____ |
| 4. | CHEM 232: Aqueous Equilibria | _____ |
| 5. | PHYS 160: Geology | _____ |

ONE course from: MATH 104: Calculus II or Math 141: Introductory Statistics or MATH 151: Accelerated Statistics

- | | | |
|----|-------|-------|
| 6. | _____ | _____ |
|----|-------|-------|

Core courses for the Biology Area of Concentration:

- BIO 112: Cells and Genes
- BIO 215: Ecology
- CHEM 303: Current Problems in Environmental Chemistry

Four additional courses from the general electives list below, including at least **two** courses at the 300 level.

Core courses for the Chemistry Area of Concentration:

- CHEM 253: Organic Chemistry I
- CHEM 303: Current Problems in Environmental Chemistry

Two of the following:

- CHEM 321: Chemistry of Natural Waters
- CHEM 332: Instrumental Analysis
- CHEM 398: Global Biogeochemical Cycles

Three additional courses from the general electives list below, including at least **one** course at the 300 level.

Core courses for the Geoscience Area of Concentration:

- CHEM 321: Chemistry of Natural Waters
- PHYS 165: Climate Change
- PHYS 170/180: Introductory Physics I
- PHYS 171/181: Introductory Physics II

Two additional courses from the geoscience electives list below and **one** additional course from the general electives list, including at least **two** courses at the 300 level.

Area of Concentration: _____

- | | | |
|-----|-------|-------|
| 7. | _____ | _____ |
| 8. | _____ | _____ |
| 9. | _____ | _____ |
| 10. | _____ | _____ |
| 11. | _____ | _____ |
| 12. | _____ | _____ |
| 13. | _____ | _____ |

General Electives

BIO 211: Genetics	CHEM 253: Organic Chemistry I - (<i>Bio & Chem areas</i>)
BIO 215: Ecology - (<i>Chem & Geo area</i>)	CHEM 254: Organic Chemistry II
BIO 220: Evolution of Invertebrates	CHEM 303: Current Problems in Environmental Chemistry
BIO 226 or PSY 226: Comparative Animal Behavior	CHEM 321: Chemistry of Natural Waters - (<i>Bio & Chem areas</i>)
BIO 231: Marine Biology	CHEM 332: Instrumental Analysis
BIO 252: Parasitology and Symbiosis	CHEM 398: Global Biogeochemical Cycles - (<i>Chem and Geo areas</i>)
BIO 262: Plant Biology	COMP 115: Robots, Games and Problem Solving (<i>Geo area</i>)
BIO 290: Biology of Whales (<i>MSC</i>)*	MATH 151: Accelerated Statistics - (<i>Geo area</i>)
BIO 291: Intro to Marine Mammals (<i>MSC</i>)*	MATH 212: Differential Equations - (<i>Geo area</i>)
BIO 303: Evolution	MATH 236: Multivariable Calculus - (<i>Geo area</i>)
BIO 317: Molecular Ecology and Evolution	MATH 251: Methods of Data Analysis - (<i>Geo area</i>)
BIO 318: Tropical Field Biology	PHYS 165: Climate Change: Past and Present - (<i>Bio area</i>)
BIO 361: Vernal Pool Conservation Biology	PHYS 227: Remote Sensing
BIO 364: Freshwater and Marine Botany	PHYS 298: Scientific Computing
BIO 368: Methods in Field Biology - (<i>Bio area</i>)	PHYS 310: Statistical and Thermal Physics - (<i>Geo area</i>)
BIO 375: Ornithology	PHYS 360: Geophysics - (<i>Chem & Geo areas</i>)
BIO 380: Wetlands Ecology (<i>MSC</i>)*	PHYS 398: Meteorology and Oceanography
BIO 390: Biology of Fishes (<i>MSC</i>)*	

Geoscience Electives

CHEM 303: Current Problems in Environmental Chemistry
CHEM 398: Global Biogeochemical Cycles
PHYS 227: Remote Sensing
PHYS 298: Meteorology and Oceanography
PHYS 298: Scientific Computing
PHYS 360: Geophysics

Courses may also be accepted, pending approval by the program coordinator, from off-campus programs including the Boston Marine Studies Consortium (*MSC*)*, Williams-Mystic Maritime Studies program, Semester in Environmental Science at the Marine Biological Laboratory and the Organization for Tropical Studies Program in Costa Rica and South Africa.

14. **Capstone** – Senior Seminar or Independent Research _____

15. **Internship** – Must be approved by Professor Scott Shumway, Program Coordinator. _____

Updated 11/2011