

ENVIRONMENTAL SCIENCE

Department of Earth and Atmospheric Sciences

The environmental science major is an extended major (no minor required) designed as an entry-level major for MSCD students as well as for students transferring as juniors from the community colleges. In addition, students may choose from five options (concentrations) depending on their areas of interest. The multidisciplinary concentration provides students with a broad-based environmental science background, whereas the concentrations in water quality, environmental chemistry, and ecological restoration are more specialized. The environmental science option for secondary science teacher licensure is the remaining concentration available to students. All concentrations, except for environmental science for teacher licensure, require a unified core. Interested students should go to the Department of Earth and Atmospheric Sciences (Science Building, Room 231) to be assigned an advisor. Students interested in teacher licensure in secondary science should consult an advisor in environmental science and teacher education.

Environmental Science Major for Bachelor of Science - Water Quality Concentration

| Required General Studies Courses | Semester Hours |
|--|----------------|
| ___ General Studies – Level I Mathematics: MTH 1110 College Algebra (<i>required</i>) | 4 |
| ___ General Studies – Level II Natural Science: CHE 1800 General Chemistry I (<i>required</i>) | 4 |
| ___ General Studies – Level II Natural Science: GEL 1010 General Geology (<i>required</i>) | 4 |
| ___ Level I Composition | 6 |
| ___ Level I Communications | 3 |
| ___ Level II Historical | 3 |
| ___ Level II Arts & Letters | 6 |
| ___ Level II Social Sciences | 6 |
| <i>Total General Studies courses (see General Requirements Brochure)</i> | <i>33</i> |
| <i>Total Multicultural requirement</i> | <i>3</i> |
| <i>(Students who have not had a computer course will be required to take CSS 1010/CMS 1010.)</i> | |

| Required Core | Semester Hours |
|---|----------------|
| ___ BIO 1080 General Introduction to Biology | 3 |
| ___ BIO 1090 General Introduction to Biology Laboratory | 1 |
| ___ CET 3320 Environmental Impact Statements | 3 |
| ___ COM 3670 Writing for the Environmental Industry (Prerequisite: COM 2610 or permission of instructor) | 3 |
| ___ ENV 1200 Introduction to Environmental Science | 3 |
| ___ ENV 4200 Environmental Policy and Planning | 3 |
| ___ GEG 1220 Map Use | 2 |
| ___ MTH 1210 Introduction to Statistics | 4 |
| ___ MTH 3240 Environmental Statistics | 4 |
| <i>Subtotal</i> | <i>26</i> |

Students must select one of the following Senior Experience courses:

| | |
|--|----------|
| ___ BIO 4510 Microbial Ecology | 4 |
| ___ BIO 4540 Plant Ecology | 4 |
| ___ CHE 4950 Senior Experience in Chemistry | 3 |
| ___ ENV 4960 Global Environmental Challenges | 3 |
| ___ ENV 4970 Environmental Field Studies | 3 |
| <i>Subtotal.....</i> | <i>3</i> |

Students must select one of the following Internships (minimum 3 credit hours):

| | |
|--|-----------|
| ___ BIO 4990 Internship in Biology | 3 |
| ___ CHE 4650 Chemistry Work Experience/Cooperative Education | 4 |
| ___ GEG 4950 Internship in Land Use | 3 |
| ___ GEL 4950 Internship in Geology | 3 |
| <i>Subtotal</i> | <i>3</i> |
| <i>Total Core Requirements</i> | <i>32</i> |

Water Quality Concentration

| Additional Required Courses: | | Semester Hours |
|--|--|-----------------------|
| ___ | CHE 1810 General Chemistry II | 4 |
| ___ | CHE 1850 General Chemistry Laboratory | 2 |
| ___ | CHE 3050 Environmental Chemistry | 3 |
| ___ | CHE 3100 Organic Chemistry I | 4 |
| ___ | CHE 3110 Organic Chemistry Laboratory 1 | 2 |
| ___ | GEL 3150 Hydrogeology | 3 |
| ___ | GEL 4150 Hydrology | 3 |
| ___ | MTR 2400 Introduction to Atmospheric Science (required) | 4 |
| ___ | OSHA Environmental Health and Safety (OSHA 40-hour course)..... (offered as continuing education at Front Range and Red Rocks Community Colleges) | 3 |
| <i>Subtotal</i> | | 28 |
| Red Rocks Community College Required Courses | | |
| ___ | WQM100 Introduction to Water Quality Management | 3 |
| ___ | WQM119 Basic Water Quality Analysis | 4 |
| ___ | WQM121 Environmental Sampling and Volume Measurement | 3 |
| ___ | WQM216 Biological and Bacteriological Water Quality Analysis | 4 |
| <i>Subtotal</i> | | 14 |
| Select 10 hours from the following courses | | |
| ___ | BIO 2400 General Microbiology | 5 |
| ___ | BIO 3550 Urban Ecology | 4 |
| ___ | BIO 4510 Microbial Ecology | 4 |
| ___ | CET 3330 Environmental Technology Processes | 3 |
| ___ | ENV 3400 Water Resources | 3 |
| ___ | GEL 3420 Soil Resources | 4 |
| ___ | MTR 3100 Air Pollution | 3 |
| ___ | WQM105 Specific Calculations for Water Quality Management (RRCC) | 4 |
| ___ | WQM200 Hydraulics for Water Quality Management (RRCC) | 4 |
| <i>Subtotal</i> | | 10 |
| <i>Total Water Quality Courses</i> | | 52 |
| General Studies | | 33 |
| Multicultural Requirement | | 3 |
| Total of Core Courses | | 32 |
| <i>Total for Water Quality Concentration</i> | | 120 |