

# Environmental Science and Society

## Environmental Chemistry Concentration

The Environmental Science and Society program is designed for those students interested in pursuing a career as an environmental technician, environmental health and safety officer, hydrologist, resource manager, and environmental lobbyist. Although, as with many science baccalaureate degrees, many of the jobs available to students who complete the environmental science concentration are entry-level, experience and graduate work can allow students to advance to environmental management positions. The environmental science degree, in consultation with an advisor, prepares students to enter a graduate degree or graduate certificate program in a specific environmental science such as atmospheric scientist, ecologist, or hydrogeologist. Students in the Environmental Science concentration can choose emphases in Atmosphere and Climate, Environmental Biology, **Environmental Chemistry**, Environmental Geoscience, or Environmental Hydrology. No other minor is needed to complete graduation requirements.

### General Education Requirements .....40 hours

#### Area I *Effective Communication* (two courses, 6 credit hours)

- 1 ENGL 121 Composition II: Research and Writing the Public Experience.
- 2 CTAC 124 Fundamentals of Speech.
- 3 **A writing intensive course within the major.** (*ENVI 305 satisfies this requirement*)

#### Area II *Quantitative Reasoning* (one course, 3-4 credit hours)

- 1 **One General Education Quantitative Reasoning course based upon placement** (*STAT 170 satisfies this requirement*)

#### Area III *Perspective on a Diverse World* (two courses, 6 credit hours)

- 1 **One course focused on Global Awareness.** (*BIO/ESSC 107 satisfies this requirement*)
- 2 One course focused on U. S. Diversity.

#### Area IV *Knowledge of the Disciplines* (eight courses, 24-32 credit hours)

- 1 Two courses in the Arts with different prefixes.
- 2 **Two courses in the Humanities with different prefixes.** (*PHIL 229 satisfies one course of this requirement*)
- 3 **Two courses in the Natural Sciences with different prefixes.** (*ESSC 110, CHEM 121 & 122, and BIO 110 satisfy this requirement*)
- 4 Two courses in the Social Sciences with different prefixes.

#### Area V *Learning Beyond the Classroom* (Satisfy two groups in LBC through experiences and/or courses, 0-9 credit hours)

- 1 **Two, both in different LBC groups** (*ENVI 488 Internship satisfies group 4, Research satisfies group 6*)

### Major Requirements .....81-90 hours

#### Core Courses .....34 hours

BIO/ESSC 107 Introduction to Environmental Science (3 hrs) *Offered Fall, Winter, Summer*  
 BIO 110 Introductory Biology (3 hrs) and BIO 111 Introductory Biology Lab (2 hrs) *Offered Fall, Winter, Summer*  
 CHEM 121 and 122 General Chemistry I with lab (4 hrs) *Offered Fall, Winter, Summer*  
 ENVI 105 Introduction to Environment and Society (3 hrs) *Offered Fall, Winter*  
 ENVI 305 Topics in Environmental Science and Society (3 hrs) *Offered Fall, Winter*  
 ENVI 405 Capstone Seminar (1 hr)- *Offered Fall, Winter, Summer*  
 ENVI 488 Internship or BIO 498, Math 498, PHY 498, CHEM 498, ENVI 498, ESSC 498- *Approval required*  
 ESSC110 The Dynamic Earth System (4 hrs) *Offered Fall, Winter, Summer\**  
 GEOG 276 Principles of GIS (3 hrs) *Offered Fall, Winter*  
 STAT 170 Elementary Statistics (3 hrs) *Offered Fall, Winter, Summer*  
 PHIL 229 Environmental Ethics (3 hrs) *Offered Fall, Winter*

#### Environmental Chemistry Required Courses .....39-48 hours

BIO 120 Introductory Biology II (3 hrs) and BIO 121 Introductory Biology II Lab (2 hrs) *Offered Fall, Winter, Summer*  
 CHEM 123 and 124 General Chemistry II and Lab (4 hrs) *Offered Fall, Winter, Summer*  
 CHEM 270 and 271 Survey of Organic Chemistry and Lab (5 hrs) *Offered Fall, Winter, Summer*  
 Or CHEM 371, 372, and 373 Organic Chemistry I and II and Lab (8 hrs) *Offered Fall, Winter, Summer*  
 CHEM 283 Introduction to Analytical Chemistry (4 hrs) *Offered Fall, Winter, Summer*  
 CHEM 332 Inorganic Chemistry (2 hrs) *Offered Winter*  
 CHEM 381W Instrumentation for Chemical Technology (2 hrs) *Offered Fall and Winter*  
 Or CHEM 481 Instrumental Analysis (4 hrs) *Offered Fall and Winter*  
 CHEM 415 Environmental Chemistry (3 hrs) *Offered Fall*  
 ESSC 212 Weather, Climate, and the Earth System (3 hrs) *Offered Fall and Winter*  
 Or ESSC 300 Introduction to Hydrology (3 hrs) *Offered Fall and Winter*

(MATH 105 College Algebra or MATH 119 Applied Calculus) and MATH 107 Plane Trigonometry (5 hrs) *Math 105 and 107 Offered Fall, Winter, Summer; MATH 119 Offered Fall and Winter*

Or MATH 112 Topics in Precalculus Mathematics (3 hrs) *Offered Fall and Winter*

Or MATH 120 Calculus I (4 hrs) *Offered Fall, Winter, Summer*

PHY 221 (or 223) Mechanics, Sound, and Heat (4-5 hrs) *Offered Fall, Winter, Summer*

PHY 222 (or 224) Electricity and Light (4-5 hrs) *Offered Fall, Winter, Summer*

***\*The stated course offerings are only a guideline and are subject to change so check with your advisor every semester for updates.***

**Environmental Chemistry Restricted Electives ..... 8 hours (3 hr maximum from CHEM 488/489/498/499)**

BIO 305 Cell and Molecular Biology (3 hrs)

BIO 306W Cell and Molecular Biology Lab (2 hrs)

BIO 310 Ecology (3 hrs)

BIO 311W Laboratory in Ecology (3 hrs)

BIO 410 Limnology (3 hrs)

CHEM 411 Toxicology I (2 hrs)

CHEM 412 Toxicology II (3 hrs)

CHEM 413 Toxicology Lab (2 hrs)

CHEM 451 Biochemistry I (3 hrs)

CHEM 452 Biochemistry II (3 hrs)

CHEM 453 Biochemistry Lab (2 hrs)

CHEM 488L4/489L4 Cooperative Education in Chemistry (2/3 hrs)

CHEM 498/499 Undergraduate Research in Chemistry (2/3 hrs)

ESSC 228 Mineralogy (4 hrs)

Or ESSC 229 Rocks and Minerals (3 hrs)

ESSC 320 Oceanography (3 hrs)

ESSC 327 Soil Science (3 hrs)

ESSC 448 Hydrogeology (3 hrs)

**University Elective Courses .....0-3 hours**

**PROGRAM TOTAL .....124-130 hours**

**Take this sheet to an Environmental Science advisor to set up a program of study.**

**Environmental Science advisors: Dr. Kovacs (Science Complex MJ 303D)**

# ENVIRONMENTAL SCIENCE ADVISING

Student's Name: \_\_\_\_\_ Student's Signature: \_\_\_\_\_

Faculty Advisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

FALL 20_____	WINTER 20 _____	SUMMER 20_____
FALL 20_____	WINTER 20 _____	SUMMER 20_____
FALL 20_____	WINTER 20 _____	SUMMER 20_____
FALL 20_____	WINTER 20 _____	SUMMER 20_____