

# Environmental Science: Chemistry Option

## Bachelor of Science (BS)

# Chemistry Option

Environmental quality is fundamental to our quality of life. Environmental science seeks to preserve and improve our environment for ourselves and future generations.

Environmental science is an inter-departmental, interdisciplinary degree program based in the College of Science, Technology and Agriculture. It is a diverse, hybrid field of study that is based upon strong training in the natural sciences, mathematics, law, economics, and health.

The curriculum for the B.S. in environmental science consists of a core of approximately 60 credit hours and 20-30 additional credit hours in one of six degree option areas. All students participate in internships and/or research. This education and training provides multiple opportunities for graduates in the growing environmental field.

### Environmental Science students will...

- Complete a science-intensive interdisciplinary curriculum providing a foundation to address environmental issues of today and the future.
- Study in modern classrooms and laboratories in the remodeled Magill Hall of Science.
- Gain valuable professional and personal experiences through internships and/or research.
- Be well prepared to enter career positions in the environmental field or to pursue post-baccalaureate education programs.
- Develop the competencies to become professional and community leaders in efforts to develop a sustainable society.

### Career Planning

Each student works individually with a faculty advisor in their area. The advisor assists students with curricular planning and development of clear career goals.

Approximately 70% of environmental science graduates directly enter the work force. All graduates seeking employment in the environmental field have obtained a relevant career position.

Approximately 30% of environmental science graduates continue their education in graduate programs in the sciences, law school, MBA programs, or medical school.

#### Demonstrated Career Proficiency is a Requirement of all Southeast Students

CL001/CL002	First Semester	Complete the FOCUS2 assessment and develop a Career Action Plan.
CL003	Junior Year	Students gain information about career planning and job searching resources.
CL004	Senior Year	Students demonstrate advanced proficiency by identifying a position in their field, developing a cover letter, and tailoring a resume for the position. Materials are critiqued to ensure preparedness for a successful job search.

**Career Services**, located in Academic Hall 057, provides professional career advising to guide students in their career development.

### Internship, Employment, and Post-Baccalaureate Opportunities of Recent Graduates

- U.S. Environmental Protection Agency
- Missouri Department of Conservation
- U.S. Green Building Council
- Centers for Disease Control and Prevention
- Illinois Natural History Survey
- A.T. Still University School of Osteopathic Medicine
- Science Applications International Corporation
- Missouri Department of Natural Resources
- Saint Louis University School of Law
- U.S. Fish and Wildlife Service
- Southern Illinois University - Edwardsville
- CH2M Hill Inc.
- KRCU National Public Radio
- Missouri Botanical Garden
- Emory University
- Burns & McDonnell Engineering Co. Inc.
- Illinois Environmental Protection Agency
- St. Louis County Department of Health
- U.S. Army Corps of Engineers
- Saint Louis Zoological Park

**To learn more**  
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This is a guide based on the 2014-2015 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use DegreeWorks to monitor their individual progress.

### CURRICULUM CHECKLIST

#### Environmental Science: Chemistry Option— 82-88 Hours Required

- \_\_\_ BI153 Introduction to Organismal Biology (4)
  - \_\_\_ BI332 General Ecology (3)
  - \_\_\_ BS105 Environmental Biology (3)
  - \_\_\_ CH185/085/005 General Chemistry (5)
  - \_\_\_ CH186 Foundations of Inorganic Chemistry (3)
  - \_\_\_ CH187 Inorganic Chemistry & Qualitative Analysis (2)
  - \_\_\_ CH271 Foundations of Analytical Chemistry (5)
  - \_\_\_ CH311 Foundations of Physical Chemistry (4)
  - \_\_\_ CH341 Foundations of Organic Chemistry (4)
  - \_\_\_ CH342 Organic Chemistry Lab I (1)
  - \_\_\_ CH450 Environmental Chemistry (3)
  - \_\_\_ EC344 Environmental Economics (3)
  - \_\_\_ EV201 Environmental Science Seminar I (1)
  - \_\_\_ EV401 Environmental Science Seminar II (1)
  - \_\_\_ EV454 Risk Assessment Applications (3)
  - \_\_\_ EV481-483 Internship (3)
  - OR
  - \_\_\_ EV491-493 Research (3)
  - \_\_\_ EV xxx EV Course (300-500 level) (3)
  - \_\_\_ GO110 Physical Geology (3)
  - \_\_\_ GO365 Environmental Soil Science (3)
  - \_\_\_ GO460 Environmental Hydrology (3)
  - \_\_\_ MA139 Applied Calculus (3)
  - OR
  - \_\_\_ MA140 Analytical Geometry & Calculus I (5)
  - \_\_\_ MA223 Elementary Probability & Statistics (3)
  - \_\_\_ PH106 Physical Concepts (3)
  - OR
  - \_\_\_ PH120 Introductory Physics I (5)
  - \_\_\_ PH121 Introductory Physics II (5)
  - \_\_\_ UI429 Environmental Ethics (3)
  - \_\_\_ UI443 Professional Experience in Chemistry (3)
- Choose 6 Hours:**
- \_\_\_ UI331 Foundations of Biochemistry (3)
  - \_\_\_ UI360 Recycling & Waste Management (3)
  - \_\_\_ UI373 Earth and Life Through Time (3)
  - \_\_\_ UI386 Environmental Health (3)
  - \_\_\_ UI387 Environmental Law & Public Policy (3)
- Choose One Course:**
- \_\_\_ CH313 Physical Chemistry Lab (3)
  - \_\_\_ CH343 Advanced Organic Chemistry (3)
  - \_\_\_ CH344 Organic Chemistry Lab II (2)
  - \_\_\_ CH391 Undergraduate Research (1-3)
  - \_\_\_ CH447 Advanced 1 & 2 Dim NMR Techniques (3)
  - \_\_\_ CH545 Organic Preparations & Characterizations (3)
  - \_\_\_ CH575 Chemical Instrumentation (4)
  - \_\_\_ CH531/UI 331 Foundations of Biochemistry (3)

#### University Studies Requirements (not already listed above):

UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Behavioral Systems, Development of a Major Civilization, Economic Systems, Political Systems, Social Systems.

### SAMPLE FOUR-YEAR PLAN

#### Environmental Science: Chemistry Option

Requirements for the 2014-2015 Undergraduate Bulletin

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
<b>FIRST YEAR</b>	UI100	3	BI153	4
	EN100	3	CH186	3
	BS105	3	CH187	2
	CH185/085/005	5	Behavioral Systems	3
	Artistic Expression	3	Written Expression	3
<b>Total</b>		<b>17</b>	<b>Total</b>	<b>15</b>
<b>SECOND YEAR</b>	CH271	4	BI332	3
	EV201	1	CH311	4
	GO110	3	PH106 or PH120/020	3-5
	MA139 or MA140	3-5	Economic Systems	3
	Literary Expression	3		
<b>Total</b>		<b>14-16</b>	<b>Total</b>	<b>13-15</b>
<i>(summer courses are encouraged to avoid semesters exceeding 15 hours)</i>				
<b>THIRD YEAR</b>	CH341	4	CH450	3
	CH342	1	EC344	3
	PH121/021	5	GO365	3
	Oral Expression	3	MA223	3
	Political Systems	3	Develop of a Major Civ	3
<b>Total</b>		<b>16</b>	<b>Total</b>	<b>15</b>
<b>FOURTH YEAR</b>	EV401	1	EV elective	3
	EV454	3	UI3XX required choice	3
	EV Intern/Research	3	UI429	3
	GO460	3	UI443	3
	CHXXX elective	2-4	Social Systems	3
<b>Total</b>		<b>15-17</b>	<b>Total</b>	<b>15</b>

**Degree requirements for all students:** a minimum of 120 credit hours, completion of University Studies program, career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the freshman and senior levels.

A minimum 2.00 GPA in the major and overall are required to graduate with a BS in Environmental Science degree.

Refer to the Undergraduate Bulletin or DegreeWorks for additional graduation requirements (i.e. minimum GPA and coursework) for your program of study.

Revised  
03/11/2014