

# 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

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.

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

The Office of Career Services in Academic Hall 057 can provide students with professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001	First Semester	Students connect academic career planning by completing an online career assessment
CL002	Second Semester	Students learn more about resources available to enhance academic and career planning
CL003	Junior Year	Students learn about continued career planning, job search strategies, and networking
CL004	Senior Year	Students learn about resume development, professional communication, interviewing, and transitioning to the first job from college

### 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

### Special Options with Environmental Science

Southeast offers a Master of Science in Environmental Science.

**To learn more**  
 Office of Admissions  
 (573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[www.semo.edu](http://www.semo.edu)

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This is a guide based on the 2017-2018 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— 90-94 Hours Required

- \_\_\_ BI163 Evolution & Ecology (4)
- \_\_\_ BI332 General Ecology (3)
- \_\_\_ BS105 Environmental Biology (3)
- \_\_\_ CH185/085/005 General Chemistry (5)
- \_\_\_ CH186 Foundations of Inorganic Chemistry (3)
- \_\_\_ EC344 Environmental Economics (3)
- \_\_\_ EN190 Writing & the Environment (3)
- \_\_\_ EV201 Environmental Science Seminar I (1)
- \_\_\_ EV400 Health Physics (3)
- \_\_\_ 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)
- \_\_\_ UI429 Environmental Ethics (3)

#### Choose 6 Hours From:

- \_\_\_ UI331 Foundations of Biochemistry (3)
- \_\_\_ UI360 Recycling & Waste Management (3)
- \_\_\_ UI370 Media Ethics (3)
- \_\_\_ UI373 Earth and Life Through Time (3)
- \_\_\_ UI386 Environmental Health (3)
- \_\_\_ UI387 Environmental Law & Public Policy (3)

#### Chemistry Option Courses

- \_\_\_ 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)
- \_\_\_ PH121 Introductory Physics II (5)
- \_\_\_ UI443 Professional Experience in Chemistry (3)

#### Choose One Course:

- \_\_\_ CH313 Physical Chemistry Lab (3)
- \_\_\_ CH343 Advanced Organic Chemistry (3)
- \_\_\_ CH344 Organic Chemistry Lab II (2)
- \_\_\_ CH391-393 Undergraduate Research (1-3)
- \_\_\_ CH447 Advanced 1 & 2 Dim NMR Techniques (3)
- \_\_\_ CH531/UI 331 Foundations of Biochemistry (3)
- \_\_\_ CH545 Organic Preparations & Characterizations (3)
- \_\_\_ CH575 Chemical Instrumentation (4)

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

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

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at [semo.edu/transfercredit](http://semo.edu/transfercredit).

### SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
<b>FIRST YEAR</b>	UI100	3	BI163	4
	EN100	3	CH186	3
	BS105	3	CH187	2
	CH185/085/005	5	EN190	3
	Artistic Expression	3	Behavioral Systems	3
	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>15</b>
Milestone: maintain 2.0 cumulative GPA				
<b>SECOND YEAR</b>	CH271	5	BI332	3
	GO110	3	CH311	4
	MA139 or MA140	3-5	EV201	1
	Literary Expression	3	PH106 or PH120/020	3-5
			Economic Systems*	3
	<b>Total</b>	<b>14-16</b>	<b>Total</b>	<b>14-16</b>
Milestone: maintain 2.0 cumulative GPA				
<i>(summer courses are encouraged to avoid semesters exceeding 15 hours)</i>				
<b>THIRD YEAR</b>	CH341	4	CHxxx elective	2-4
	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>14-16</b>
Milestone: maintain 2.0 cumulative GPA				
<b>FOURTH YEAR</b>	EV400	3	EV401	1
	EV454	3	EV elective	3
	EV Intern/Research	3	UI3XX required choice	3
	GO460	3	UI429	3
	UI3XX required choice	3	UI443	3
			Social Systems	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>16</b>	
Milestone: maintain 2.0 cumulative GPA				

\*EC101 highly recommended by department

A "Milestone" signifies a significant stage for a student in the completion of a degree.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of University Studies program, completion of 39 senior division hours (300-599), career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAP) at the senior level. Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

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

Revised  
3/31/2017

Degree Map 2017-2018

**To learn more**  
Office of Admissions  
(573) 651-2590  
[admissions@semo.edu](mailto:admissions@semo.edu)  
[www.semo.edu](http://www.semo.edu)

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