

# ENVIRONMENTAL CHEMISTRY

## REQUIREMENTS

### CORE CURRICULUM

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at [marshall.edu/gened](http://marshall.edu/gened).

#### CORE 1: CRITICAL THINKING

CODE	COURSE NAME	HRS	GRADE
FYS 100	First Year Seminar	● 3	_____
MTH 229	Critical Thinking Course	● 5	_____
_____	Critical Thinking Course	● 3	_____

#### Additional University Requirements

_____	Writing Intensive (CHM 357 or 358)	4	_____
_____	Writing Intensive	3	_____
_____	Multicultural or International	3	_____
CHM 491	Capstone	2	_____

#### CORE 2:

CODE	COURSE NAME	HRS	GRADE
ENG 101	Beginning Composition	● 3	_____
ENG 201	Advanced Composition	● 3	_____
CMM 103	Fund Speech-Communication	● 3	_____
MTH 229	Calculus/Analytic Geom I (CT)	● ♦ 5	_____
CHM 211 & 217	Principles of Chemistry I & Lab	● ♦ 5	_____
_____	Core II Humanities	● 3	_____
_____	Core II Social Science	● 3	_____
_____	Core II Fine Arts	● 3	_____

### MAJOR-SPECIFIC

All Environmental Chemistry majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
CHM 211	Principles of Chemistry I	● ♦ 3	_____	PHY 203	College Physics II	♦ 3	_____
CHM 217	Principles of Chemistry I Lab	● ♦ 2	_____	PHY 204	College Physics II Lab	♦ 1	_____
CHM 212	Principles of Chemistry II	♦ 3	_____	BSC 120/L	Principles of Biology I / Lab	● ♦ 3/1	_____
CHM 218	Principles of Chemistry II Lab	♦ 2	_____	BSC 121/L	Principles of Biology II / Lab	♦ 3/1	_____
CHM 355	Organic Chemistry I	♦ 3	_____	BSC 320	Ecology	♦ 4	_____
CHM 356	Organic Chemistry II	♦ 3	_____	BSC 445	Micro Ecology	♦ 4	_____
CHM 361	Organic Chemistry II Lab	♦ 3	_____	GLY 200	The Dynamic Earth	♦ 3	_____
CHM 305	Research Methods Chemistry	♦ 1	_____	GEO 416	Envir Plan or Enviro Geo or 422	♦ 3	_____
CHM 357	Physical Chemistry: Quantum or or 358	♦ 4	_____	NRE 322	Assesment I	♦ 4	_____
CHM 365	Biochemistry	♦ 3	_____	NRE 323	Assesment II	♦ 3	_____
CHM 411	Modern Instrumental Methods	♦ 3	_____	MTH 229	Calculus/Analytic Geom I (CT)	● ♦ 5	_____
CHM 491	Capstone	● ♦ 2	_____	_____	Statistics Elective	♦ 3	_____
CHM 432	Seminar	♦ 0	_____	_____	Environ Science Requirement	♦ 4	_____
_____	Environmental Analytical Chemistry	♦ 3	_____	_____	Environ Science Requirement	♦ 4	_____
PHY 201	College Physics I	♦ 3	_____	_____	Free Elective	1	_____
PHY 202	College Physics I Lab	♦ 1	_____				

### MAJOR INFORMATION

- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the University writing intensive requirement.
- Course offerings and course attributes are subject to change semesters. Please consult each semesters schedule of courses for availability and attributes.
- Math is based on an ACT Mathematics score of 27 or higher. Students with

an ACT Mathematics score less than 27 will be placed in the appropriate mathematics and science courses.

- Environ Science Requirement: Students should choose at least 8 credit hours from the following courses: BSC 431, 446 CHM 467 GLY 320L, 420, 455, 455L, 456, 456L NRE 320, 321 PHY 412; courses from a maximum of two departments may be selected. Students wishing a physical science emphasis may take all of the Geology electives and not take either BSC 445 or NRE 323.
- A Grade Point Average of 2.0 is required 1) overall, 2) at MU, 3) in all required Chemistry courses, 4) in all Chemistry courses, and 5) in all required Chemistry courses taken at MU.
- Double majors within the Department of Chemistry may include any majors other than the B.S., Major in Chemical Sciences.

● Area of Emphasis

♦ Major Requirement

■ College Requirement

● General Education Requirement

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

# ENVIRONMENTAL CHEMISTRY

Students completing the environmental chemistry major will be prepared for career opportunities in environmental chemistry, toxicology, environmental policy, and consulting. Additionally, Environmental Chemistry is an excellent choice for students desiring to pursue professional training in Law, or Safety, or Industrial Hygiene.

FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
CHM 211	Principles of Chemistry I	3	◆	_____	ENG 201	Advanced Composition	3	●	_____	
CHM 217	Principles of Chemistry I Lab	2	◆	_____	CHM 212	Principles of Chemistry II	3	◆	_____	
BSC 120/L	Principles of Biology I / Lab	3/1	◆	_____	CHM 218	Principles of Chemistry II Lab	2	◆	_____	
ENG 101	Beginning Composition	3	●	_____	MTH 229	Calculus/Analytic Geom I (CT)	5	◆	_____	
FYS 100	First Year Sem Crit Thinking	3	●	_____	BSC 121/L	Principles of Biology II / Lab	3/1	◆	_____	
UNI 100	Freshman First Class	1		_____					_____	
<b>TOTAL HOURS</b>				<b>16</b>	<b>TOTAL HOURS</b>				<b>17</b>	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
CHM 355	Organic Chemistry I	3	◆	_____	CHM 356	Organic Chemistry II	3	◆	_____	
PHY 201	College Physics I	3	◆	_____	CHM 361	Organic Chemistry Lab	3	◆	_____	
PHY 202	College Physics I Lab	1	◆	_____	PHY 203	College Physics II	3	◆	_____	
_____	Core I Critical Thinking	3	●	_____	PHY 204	College Physics II Lab	1	◆	_____	
_____	Core II Social Science	3	●	_____	CMM 103	Fund Speech-Communication	3	●	_____	
				_____	_____	Core II Fine Arts	3	●	_____	
<b>TOTAL HOURS</b>				<b>13</b>	<b>TOTAL HOURS</b>				<b>16</b>	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
CHM 357	Physical Chemistry: Quantum (or 358 in Spring)	4	◆	_____	_____	Enviro Science Requirement	4	◆	_____	
CHM 305	Research Methods Chemistry	1	◆	_____	_____	Core II Humanities (WI)	3	●	_____	
CHM 365	Intro to Biochemistry	3	◆	_____	_____	Statistics Elective	3	◆	_____	
BSC 320	Ecology	4	◆	_____	CHM 411	Modern Instrumental Methods	4	◆	_____	
_____	Free Elective	1		_____	GLY 200	The Dynamic Earth	3	◆	_____	
<b>TOTAL HOURS</b>				<b>13</b>	<b>TOTAL HOURS</b>				<b>17</b>	
Summer Term (optional):										
FALL SEMESTER					SPRING SEMESTER					
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE		
_____	Environmental Analytical Chemistry	3	◆	_____	CHM 432	Chemistry Seminar	0	◆	_____	
CHM 491	Capstone Experience (or CHM 490)	2	◆	_____	GEO 422	Environmental Geography	3	◆	_____	
_____	Enviro Science Requirement	4	◆	_____	BSC 445	Micro Ecology	3	◆	_____	
_____	Writing Intensive	3	●	_____	NRE 323	Assessment II: Aquatic Ecology	4	◆	_____	
NRE 322	Assess I: Terrestrial Systems	4	◆	_____	_____	Multicultural or International	3	●	_____	
<b>TOTAL HOURS</b>				<b>16</b>	<b>TOTAL HOURS</b>				<b>13</b>	
Summer Term (optional):										

◆ Area of Emphasis

◆ Major Requirement

■ College Requirement

● General Education Requirement

◆ Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.