

College of Science - Chemistry, BS with Concentration in Environmental Chemistry

Catalog Year: 2019 - 2020

			Grades	
Mason Core Requirements: 30 credits	Course Information	Credits	Earned	Needed
Written Communication:	ENGH 101 (100)	3		
Oral Communication:		3		
*Quantitative Reasoning	*Satisfied by Major Requirements			
Information Technology		3		
Arts		3		
Global Understanding		3		
Literature		3		
*Natural Science	*Satisfied by Major Requirements			
Social & Behavioral Sciences		3		
Western Civilization/World History		3		
Written Communication:	ENGH 302	3		
Synthesis/Capstone		3		

Major Requirements with Concentration in Environmental Chemistry (85-87 credits) Students must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of 'D' (1.00) in CHEM coursework at graduation. Major termination policy: No chemistry, math, or science course that is required for the major may be attempted more than three times. Students who do not successfully complete such a course with a grade of C or better by the third attempt may be terminated from the major.

CHEM 211	General Chemistry I	3		
CHEM 213	General Chemistry Laboratory I	1		
CHEM 212	General Chemistry II	3		
CHEM 214	General Chemistry Laboratory II	1		
CHEM 313	Organic Chemistry I	3		
CHEM 314	Organic Chemistry II	3		
CHEM 315	Organic Chemistry Lab I	2		
CHEM 318	Organic Chemistry Lab II	2		
CHEM 321	Quantitative Chemical Analysis	4		
CHEM 331	Physical Chemistry I	3		
CHEM 332	Physical Chemistry II	3		
CHEM 336	Physical Chemistry Lab I 1	2		
CHEM 337	Physical Chemistry Lab II	2		
CHEM 422	Instrumental Methods of Chemical Analysis	3		
CHEM 423	Instrumental Methods of Chemical Analysis Lab	2		
CHEM 427	Aquatic Environmental Chemistry	3		
CHEM 438	Atmospheric Chemistry	3		
CHEM 441 or CHEM 446	Properties and Bonding of Inorganic Compounds or Bioinorganic Chemistry	3		
CHEM Elective (lecture or research course)		3		
MATH 113	Analytic Geometry and Calculus I	4		
MATH 114	Analytic Geometry and Calculus II	4		
MATH 213 or STAT 250	Analytic Geometry & Calculus III or Introductory Statistics I	3		

Select one PHYS sequence below:

PHYS 160/161 and 260/261 or PHYS 243/244 & PHYS 245/246	University Physics I & II with Labs or College Physics I & II with Labs	8		
GEOL 101	Introductory Geology I (Mason Core)	4		
GEOL 306	Soil Science	3		
EVPP 210 or BIOL 213	Environmental Biology: Molecules and Cells or Cell Structure and Function	4		

Supporting Electives (6-8 credits): CHEM 458 or BIOL 309 or EVPP 309 or GEOL 309; EVPP 301, 445; GEOL 305, 313; BIOL 305 & 306 or EVPP 305 & 306; GGS 302

Concentration Elective #1:		3-4		
Concentration Elective #2:		3-4		

Degree Notes

Approx. 3-5 credits may be completed with elective courses to bring the degree total to 120 with 45 of these credits at the 300/400 level.

Advisor Notes:

Sample Schedule: BS in Environmental Chemistry

FRESHMAN YEAR (29 CR)

Semester 1		Semester 2	
CHEM 211, 213 General Chemistry I	4	CHEM 212, 214 General Chemistry II	4
MATH 113 Anal. Geom. & Calc. I	4	MATH 114 Anal. Geom. & Calc. II	4
HIST requirement	3	BIOL 213 or EVPP 210	4
ENGH 101	3	COMM requirement	3
	14		15

SOPHOMORE YEAR (31 CR)

Semester 3		Semester 4	
CHEM 313 Organic Chemistry I	3	CHEM 314 Organic Chemistry II	3
CHEM 315 Organic Chemistry Lab I	2	CHEM 318 Organic Chemistry Lab II	2
PHYS 160 or 243 Physics Lec. I	3	CHEM 321 Quant. Chem. Analysis	4
PHYS 161 or 244 Physics Lab I	1	PHYS 260 or 245 Physics Lec. II	3
MATH 213 or STAT 250	3	PHYS 261 or 246 Physics Lab II	1
IT requirement	3	Literature requirement	3
	15		16

JUNIOR YEAR (29 CR)

Semester 5		Semester 6	
CHEM 331 Physical Chemistry I	3	CHEM 332 Physical Chemistry II	3
CHEM 336 Physical Chemistry Lab I	2	CHEM 337 Physical Chemistry Lab II	2
CHEM 438 Atmospheric Chemistry	3	CHEM 427 Aquatic Environmental	3
GEOL 101	4	GEOL 306	3
ENGH 302	3	Fine Arts requirement	3
	15		14

SENIOR YEAR (31 CR)

Semester 7		Semester 8	
CHEM 441 or 446 Inorganic Chem.	3	CHEM elective	3
CHEM 422 Instr. Meth. Chem. Anal.	3	CHEM 423 Instr. Meth. Chem. Anal. Lab	2
Global Understanding requirement	3	Synthesis requirement	3
Social and Behavioral Sciences req.	3	Science Elective	3-4
Science Elective	3-4	Electives	3-5
	15-16		14-17

Note: Mason Core courses and Electives can generally be taken during any semester. The major degree requirements are shown in the order in which they should be taken so that pre- and co-requisites are satisfied. Students may choose any combination of courses from the environmental Science Electives category. However, some combinations, may provide a particular focus in the concentration. For example:

Ecotoxicology and/or Biochemical Toxicology
Hydrogeochemistry
Chemical Ecology

EVPP 210 or BIOL 213, EVPP 445, CHEM 463
EVPP 309 or CHEM 458, GEOL 305, GEOL 313
EVPP 301, EVPP 306/306, GGS 302