

Environmental Option and Typical Schedule	
Fall	Spring
FIRST YEAR	
General Chemistry Lecture (4.0 cr) ¹ 01:160:161 OR 01:160:163	General Chemistry Lecture (4.0 cr) 01:160:162 OR 01:160:164
General Chemistry Laboratory (1.0 cr) 01:160:171 Either fall or spring	
Calculus I (4.0 cr) 01:640:151	Calculus II (4.0 cr) 01:640:152
SECOND YEAR	
Organic Chemistry Lecture (4.0 cr) 01:160:307 OR 01:160:315 ² (by invitation)	Organic Chemistry Lecture (4.0 cr) 01:160:308 OR 01:160:316
Analytical Chemistry (3.0 cr) 01:160:251	Organic Chemistry Laboratory ³ (2.5 cr) 01:160:309
General Physics (3.0 cr) 01:750:203	General Physics (3.0 cr) 01:750:204
General Physics Lab (1.0 cr) 01:750:205	General Physics Lab (1.0 cr) 01:750:206
Multivariable Calculus (4.0 cr) 01:640:251	Linear Algebra (3.0 cr) 01:640:250 OR Elementary Differential Equations (3.0 cr) 01:640:252
THIRD YEAR	
Physical Chemistry Lecture (3.0 cr) 01:160:327 ⁴ OR 01:160:341 ⁴	Physical Chemistry Lecture (3.0 cr) 01:160:328 OR 01:160:342
Organic Chemistry Laboratory ² (2.5 cr) 01:160:310	Experimental Physical Chemistry (2.5 cr) 01:160:329
Inorganic Chemistry (3.0 cr) 01:160:351 ⁵	Inorganic Chemistry (1.5 cr) 01:160:352 OR 01:160:353 ⁵
Instrumental Analysis (3.0 cr) 01:160:348 ⁶	
FOURTH YEAR	
Seminar (1.0 cr) 01:160:491	Seminar (1.0 cr) 01:160:492
Research (=2 cr) 01:160:495 Independent Study OR 01:160:497 Honors Research	Research (=2 cr) 01:160:496 Independent Study OR 01:160:498 Honors Research
Environmental elective ⁷	Environmental elective ⁷

Environmental Option: Summary

The Environmental Option is intended for students who have a strong interest in chemistry as it relates to environmental issues such as air and water quality, long-term global cycles, and resource management. Often the students who choose this option plan either to seek immediate employment as chemists in areas related to environmental chemistry or to attend graduate school.

To the courses of the Core Option, the Environmental Option adds

- at least 4 credits of senior-level research; 6 credits are recommended
- two courses from the list below
 - 01:160:415 Theory and Interpretation of Organic Spectra (3)
 - 01:160:439 Physical Chemistry of the Environment (3)
 - 01:160:451 Analytical Spectroscopy (3)
 - 01:460:401 Introduction to Geochemistry (4)
 - 01:460:417 Environmental Geochemistry (3)
 - 11:375:422 Air sampling and Analysis (3)
 - 11:375:444 Water Chemistry (3)
 - 11:628:472 Chemical Oceanography (4)

With the further addition to the core of one course in Biochemistry, this program leads to American Chemical Society certification, a credential that is valued by some employers.

Environmental Option: Course and Scheduling Notes

¹ Pre-calculus prerequisite

² Chem 309 is offered in the spring only; Chem 310 is offered only in the *fall* only.

³ By invitation only.

⁴ Chemistry 327 and 341 have Math 251 as a pre-requisite, not as a co-requisite.

Chemistry 327-328 is acceptable for all Chemistry majors and is required for the Chemical Physics Option.

Chemistry 341-342 is recommended for students oriented toward the life sciences, and for students taking the Chemical Biology option.

⁵ Chem 351 and 352 or 353 may be deferred for either one or two semesters, if desired. Both 351 and 353 are offered *fall*. *Chem 352 is offered spring*. Chem 352 and 353 have Chem 351 and Chem 308 or 316 as pre-requisites.⁶ Chem 348 has Chem 251 as a pre-requisite. Chem 348 is offered in the *fall* only; Chem 251 is offered both *fall* and *spring*.

⁷ Students may choose any of the courses from the list below.

- 01:160:415 Theory and Interpretation of Organic Spectra (3)
- 01:160:439 Physical Chemistry of the Environment (3)
- 01:160:451 Analytical Spectroscopy (3)
- 01:460:401 Introduction to Geochemistry (4)
- 01:460:417 Environmental Geochemistry (3)

- 11:375:422 Air sampling and Analysis (3)
- 11:375:444 Water Chemistry (3)
- 11:628:472 Chemical Oceanography (4)