

ENVIRONMENTAL CHEMISTRY

Bachelor of Science - Chemistry; Environmental Chemistry Concentration College Humanities & Sciences

Degree Specific Credits: 89

Required Cumulative GPA: 2.0

Catalog Year: 2017-2018

General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umn.edu/academics/general-education-requirements>) of the catalog.

Summary

Lower Core Courses	54
General Chemistry	
Organic Chemistry	
Physics	
Mathematics	
Geology	
Biochemistry Biology	
Upper Division Core Courses	25-26
Analytical Chemistry	
Physical Chemistry	
Inorganic Chemistry	
Biochemistry	
Statistics	
Geology	
Advanced Electives	8
Ethics	3
Total Hours	90-91

Lower Core Courses

Rule: All courses in all subcategories listed are required

General Chemistry

CHMY 141N & CHMY 142N	College Chemistry I and College Chemistry I Lab	5
CHMY 143N & CHMY 144N	College Chemistry II and College Chemistry II Lab	5
Total Hours		10

Minimum Required Grade: C-

Organic Chemistry

CHMY 221	Organic Chemistry I	3
CHMY 222	Organic Chemistry I Lab	2
CHMY 223	Organic Chemistry II	3
CHMY 224	Organic Chemistry II Lab	2
Total Hours		10

Minimum Required Grade: C-

Physics

PHSX 215N	Fund of Physics w/Calc I	4
PHSX 216N	Physics Laboratory I w/Calc	1
PHSX 217N	Fund of Physics w/Calc II	4
PHSX 218N	Physics Laboratory II w/Calc	1
Total Hours		10

Minimum Required Grade: C-

Mathematics

M 171	Calculus I	4
M 172	Calculus II	4
Total Hours		8

Minimum Required Grade: C-

Geology

GEO 101N	Introduction to Physical Geology	3
GEO 102N	Introduction to Physical Geology Lab	1
Total Hours		4

Minimum Required Grade: C-

Biochemistry Biology

BCH 110	Intro Biology for Biochemists	3
BCH 111	Intro Biol for Biochemists Lab	1
BIOB 260	Cellular and Molecular Biology	4
BIOB 272	Genetics and Evolution	4
Total Hours		12

Minimum Required Grade: C-

Upper Division Core Courses

Rule: All subcategories must be completed

Analytical Chemistry

Rule: Complete all of the following courses

CHMY 311	Analytical Chem-Quant Analysis	4
CHMY 421	Advanced Instrument Analysis	4
Total Hours		8

Minimum Required Grade: C-

Physical Chemistry

Rule: Choose 1 of the listed courses

CHMY 360	Applied Physical Chemistry	3-4
or CHMY 373	Phys Chem-Kntcs & Thrmdynmcs	
Total Hours		3-4

Minimum Required Grade: C-

Inorganic Chemistry

Rule: Complete the following course

CHMY 401	Advanced Inorganic Chemistry	3
Total Hours		3

Minimum Required Grade: C-

Biochemistry

Rule: Complete the following course

BCH 480	Advanced Biochemistry I	3
Total Hours		3

Minimum Required Grade: C-

Statistics

Rule: Complete the following courses

STAT 451	Statistical Methods I	3
STAT 457	Computer Data Analysis I	1
Total Hours		4

Minimum Required Grade: C-

Geology

Rule: Complete the following course

GEO 327	Geochemistry	4
Total Hours		4

Minimum Required Grade: C-

Advanced Electives

Rule: Choose at least 8 credits from the listed courses.

Note:

- 3 credits maximum of CHMY 492.
- 3 credits maximum of BIOB 492.
- 3 credits maximum of GEO 492.
- A maximum of 5 credits of Modern Foreign Language may be applied to meet the Advanced Electives requirement.

Select at least 8 credits from the following: 8

BIOB 490	Adv Undergrad Research
BIOB 492	Independent Study
BIOE 370	General Ecology
BIOE 439	Stream Ecology
BIOE 453	Ecology of Small & Large Lakes
BIOM 360	General Microbiology (equiv to BIOM 260)
CHMY 373	Phys Chem-Kntcs & Thrmdynmcs
CHMY 391	Special Topics/Expmntl Crse
CHMY 402	Advanced Inorganic Chem Lab
CHMY 403	Descriptive Inorganic Chem
CHMY 442	Aquatic Chemistry
CHMY 465	Organic Spectroscopy
CHMY 466	FT-NMR Optn for Undrgrd Rsrch
CHMY 491	Special Topics/Expmntl Crse
CHMY 492	Independent Study
GEO 320	Global Water

GEO 420	Hydrogeology	
GEO 492	Independent Study	
STAT 452	Statistical Methods II	
Total Hours		8

Minimum Required Grade: C-

Ethics

Rule: Complete the following course

CHMY 305E	Ethics, Literature and Writing in the Sciences	3
Total Hours		3

Minimum Required Grade: C-