

ENVIRONMENTAL SCIENCE MAJOR: ENVIRONMENTAL CHEMISTRY TRACK (B.S.)

CORE REQUIREMENTS (8 Courses)

Cr. 5 F, S, Su
CHM 103

Cr. 4 F, S
BIO 105

Cr. 3 F, S
ENV 101

Cr. 4 F, S
GEO 101

Cr. 3 F, S
GEO 305

Cr. 1 F, S
GEO 401

Cr. 4 F, S, Su
MIC 230

Cr. 4 F, S, Su
STAT 145

BIO 341 F** - Cr. 3
BIO 447 S** - Cr. 3
BIO 499 F, S, SU** - Cr. 1-3
CHM 413 F** - Cr. 2
CHM 479 O** - Cr. 1-3
CHM 499 F, S, SU** - Cr. 1-3

CHM 413 can ONLY be applied to Field Experience OR Environmental Chemistry

**ENVIRONMENTAL SCIENCE
FIELD EXPERIENCE
(Min 3 Credits*)**

GEO 221 F - Cr. 4
GEO 222 S - Cr. 4
**EARTH'S CLIMATE AND
LANDFORMS
(1 Course*)**

GEO 221 F - Cr. 4
GEO 222 S - Cr. 4
GEO 422 S** - Cr. 3
GEO 425 F, OY** - Cr. 3
GEO 428 S, EY** - Cr. 3
GEO 430 S, OY** - Cr. 3
GEO 460 F, EY** - Cr. 3

GEO 221 and GEO 222 can ONLY be applied to Earth's Climate OR Earth's Environmental Systems

**EARTH'S ENVIRONMENTAL
SYSTEMS (2 Courses*)**

ENV 303 F, S - Cr. 3
ENV 304 A - Cr. 3
GEO 309 F, OY - Cr. 3
GEO 310 F, EY - Cr. 3
GEO 320 S, OY - Cr. 3
GEO 321 S - Cr. 3
GEO 340 F, EY - Cr. 3
GEO 427 F, OY** - Cr. 3

**HUMANS AND
THE ENVIRONMENT
(2 Courses*)**

BIO 202 W, Su - Cr. 2
BIO 419 F** - Cr. 3
CHM 301 F, S - Cr. 5
GEO 488 S, OY** - Cr. 3
MTH 207 F, S, Su - Cr. 5
STAT 405 F - Cr. 3

**QUANTITATIVE
ANALYSIS
(1 Course*)**

Cr. 5 F, S
CHM 104

**ENVIRONMENTAL
CHEMISTRY CORE
(1 Course)**

**EVS
EXIT
SURVEY**

CHM 300 F, S, Su - Cr. 4
CHM 304 F, S - Cr. 3

**ORGANIC CHEMISTRY
ELECTIVES (1 Course*)**

CHM 312 S - Cr. 3
CHM 322 S - Cr. 4
CHM 412 F - Cr. 3
CHM 413 F - Cr. 2

CHM 413 can ONLY be applied to Field Experience OR Environmental Chemistry

**ENVIRONMENTAL CHEMISTRY
ELECTIVES (2 Courses*)**

PREREQUISITES:
→
REQUIRED

LEGEND (WHEN OFFERED):

F = FALL
S = SPRING
SU = SUMMER
W = WINTER
A = ANNUALLY
OY = ODD NUMBERED YEARS
EY = EVEN NUMBERED YEARS
** = JR/SR STANDING

* See Undergraduate Catalog for course prerequisite details

It is recommended that environmental science majors complete a minor in earth science, human and environmental geography, geographic information science, geoarchaeology, sustainability and environmental studies, biology, chemistry, and / or microbiology.

Environmental Science Major: ENVIRONMENTAL CHEMISTRY B.S.**62 - 70 CREDITS****Environmental Science Core (8 required courses):**

Name	Credits	Description	Prerequisite	Offered
BIO 105	4	General Biology	-	F, S
CHM 103	5	General Chemistry I	MTH 150 or placement in MTH 151	F, S, Su
ENV 101	3	Introduction to Sustainability	-	F, S
GEO 101	4	Earth Environments	-	F, S
GEO 305	3	Geographic Information Systems and Science I	-	F, S
MIC 230	4	Fundamentals of Microbiology	BIO 105	F, S, Su
STAT 145	4	Elementary Statistics	MTH 050	F, S, Su
GEO 401	1	Capstone Seminar in Geography and Environmental Science	Senior Standing	F, S

Earth's Climate and Landforms (Choose 1 courses)

Name	Credits	Description	Prerequisite	Offered
GEO 221	4	Weather and Climate	GEO 101	F
GEO 222	4	Earth Surface Processes and Landforms	GEO 101	S

Humans and the Environment (Choose 2 courses)**(Maximum of one course from ENV 303; maximum of one course from ENV 304)**

Name	Credits	Description	Prerequisite	Offered
ENV 303	3	Topics in Sustainability and Environmental Studies	ENV 101	F, S
ENV 304	3	Topics in Environmental Justice	ENV 101 or ENV 201	A
GEO 309	3	Cities: Past, Present, and Future	-	F-Odd
GEO 310	3	Transportation Equity and Sustainable Communities	-	F-Even
GEO 321	3	Sustainable Development and Conservation	-	S
GEO 340	3	Polar Environments	-	F-Even
GEO 427	3	Sustainable Water Resource Management	-	F-Odd

Earth's Environmental Systems (Choose 2 courses)**(GEO 221 and GEO 222 can only be applied to Earth's Climate and Landforms or Earth's Environmental Systems)**

Name	Credits	Description	Prerequisite	Offered
GEO 221	4	Weather and Climate	GEO 101	F
GEO 222	4	Earth Surface Processes and Landforms	GEO 101	S
GEO 422	3	Meteorology	GEO 221	S
GEO 425	3	Biogeography	GEO 101	F-Odd
GEO 428	3	Past Environmental Change	GEO 221 and GEO 222	S-Even
GEO 430	3	River Systems	GEO 222	S-Odd
GEO 460	3	Environmental Hazards	GEO 221 or GEO 222	F-Even

Quantitative Analysis (Choose 1 course)

Name	Credits	Description	Prerequisite	Offered
BIO 202	2	Intro to Biological Data Analysis and Interpretation	BIO 105	W, Su
BIO 419	3	Quantitative Methods in Ecology	BIO 307 or BIO 341; STAT 145 or MTH 265	F
CHM 301	5	Analytical Chemistry	CHM 104	F, S
GEO 488	3	Quantitative Methods in Geography	GEO 305; STAT 145	S - Odd
MTH 207	5	Calculus I	MTH 151	F, S, Su
MTH 265	4	Mathematical Models in Biology	MTH 175 or MTH 207	S
STAT 405	3	Statistical Methods	STAT 145	F

Environmental Science Field Experience (Complete a minimum of 3 credits)

Name	Credits	Description	Prerequisite	Offered
BIO 341	3	Limnology	BIO 105	F
BIO 447	3	Standard Methods / Quality Assurance Water Analyses	BIO 203 or BIO 210 or BIO 303 or BIO 304	S
BIO 499	1-3	Independent Research	-	F, S, Su
CHM 413	2	Environmental Chemistry Laboratory	CHM 300 or CHM 301 or CHM 303	F
CHM 479	1-3	Field Research Station Experience	CHM301 or CHM 302 or CHM 305 or CHM 313 or CHM 325 or CHM 413 or CHM 417 or CHM 461	O
CHM 499	1-3	Research		F, S, Su
GEO 410	3	Geospatial Field Methods	GEO 305	F
GEO 412	3	Geospatial Applications of Unmanned Aerial Systems	GEO 305	S
GEO 450	1-6	Internship in Geography and Environmental Science	-	F, W, S, Su
GEO 499	1-3	Research in Geography and Environmental Science	-	F, W, S, Su
MIC 499	1-3	Independent Research in Microbiology	-	F, W, S, Su

ENVIRONMENTAL CHEMISTRY TRACK (4 courses required)**Environmental Chemistry Core – (1 course required)**

Name	Credits	Description	Prerequisite	Offered
CHM 104	5	General Chemistry II	CHM 103	F, S

Organic Chemistry – (Choose 1 course)

Name	Credits	Description	Prerequisite	Offered
CHM 300	4	Fundamental Organic Chemistry	CHM 104	F, S, Su
CHM 303	3	Organic Chemistry Theory I	CHM 104	F, S

Environmental Chemistry Electives – (Choose 2 courses)

(CHM 413 can only be applied to the Field Experience or Environmental Chemistry Electives)

Name	Credits	Description	Prerequisite	Offered
CHM 312	3	Atmospheric Chemistry	CHM 300 or CHM 303	S
CHM 322	4	Chemistry of Materials	CHM 301; CHM 300 or 303	S
CHM 412	3	Aquatic and Soil Chemistry	CHM 300 or CHM 303	F
CHM 413	2	Environmental Chemistry Lab	CHM 300 or CHM 301 or CHM 303	F

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