

GEOGRAPHY - ENVIRONMENTAL SCIENCE OPTION, BA

Introduction

Please click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/>) to see Geography and Environmental Sciences department information.

The Geography program (within the Department of Geography and Environmental Sciences) offers a BA degree that includes a full range of courses in the fundamentals of geography taught mainly by full-time faculty.

These degree requirements are subject to periodic revision by the academic department, and the College reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their major advisor and CLAS advisor to confirm the best plans of study before finalizing them.

Program Delivery

- This is an on-campus program.

Declaring This Major

- Click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/records-registration/registration/declare-change-major-minor/>) to go to information about declaring a major.

General Requirements

To earn a degree, students must satisfy all requirements in each of the three areas below, in addition to their individual major requirements.

- CU Denver General Graduation Requirements (<http://catalog.ucdenver.edu/cu-denver/undergraduate/graduation/general-graduation-requirements/>)
- CU Denver Core Curriculum (<http://catalog.ucdenver.edu/cu-denver/undergraduate/graduation-undergraduate-core-requirements/>)
- College of Liberal Arts & Sciences Graduation Requirements (<http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/#graduationrequirements>)
- Click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/academic-policies-procedures/>) for information about Academic Policies

Program Requirements

- Students must complete a minimum of 41 credit hours, including a minimum of 27 GEOG, GEOL or ENVS credit hours and 11 credit hours of ancillary coursework.
- Students must complete a minimum of 24 upper division (3000-level and above) GEOG credit hours.
- Students must earn a minimum grade of C- (1.7) in all major courses taken at CU Denver and must achieve a minimum cumulative major GPA of 2.0. All graded attempts in required and elective courses are

calculated in the major GPA. Students cannot complete major or ancillary course requirements as pass/fail.

- Students must complete a minimum of 15 GEOG, GEOL or ENVS credit hours at CU Denver.

Program Restrictions, Allowances and Recommendations

- Only 3 credits of Travel Study may be counted toward graduation requirements.
- Undergraduate students may count up to 6 credit hours of independent study or internship (any combination of GEOG 3840 Independent Study: GEOG, GEOG 4840 Independent Study: GEOG, GEOG 4880 Directed Research, or GEOG 3939 Internship) towards elective credit in the major as approved by the undergraduate coordinator. Students may not receive more than 3 credit hours per independent study section. No more than 3 credit hours of independent study may be taken with the same instructor or in the same term.
- GEOG 3939 Internship: Community/Professional Experience optional, but highly recommended.

Required Courses

Code	Title	Hours
<i>Take all of the following required courses:</i>		21-22
ENVS 1044 & ENVS 1045	Introduction to Environmental Sciences and Introduction to Environmental Sciences Laboratory	3-4
or GEOG 1202	Introduction to Physical Geography	
GEOG 1102	World Regions Global Context	3
or GEOG 1302	Introduction to Human Geography	
GEOG 2080	Introduction to Mapping and Map Analysis	3
GEOG 3232	Weather and Climate	3
GEOG 3412	Globalization and Regional Development	3
GEOG 4020	Earth Environments and Human Impacts	3
GEOG 4265	Sustainability in Resources Management	3

Quantitative Methods

Code	Title	Hours
<i>Take one of the following</i>		3
ANTH 4050	Quantitative Methods in Anthropology	3
GEOG 4770	Applied Statistics for the Natural Sciences	3
MATH 2830	Introductory Statistics	3
PSYC 2090	Statistics and Research Methods	4

Geo-Spatial Analysis

Code	Title	Hours
<i>Take one of the following</i>		3
GEOG 4060	Remote Sensing I: Introduction to Environmental Remote Sensing ¹	3
GEOG 4080	Introduction to GIS ²	3
GEOG 4085	GIS Applications for the Urban Environment	3
GEOG 4235	GIS Applications in the Health Sciences	3

¹ pre-req for Remote Sensing II² highly recommended; pre-req to most of the advanced GIS courses

Environmental Science Elective Course

Code	Title	Hours
<i>Take one of the following</i>		
GEOG 3240	Colorado Climates	3
GEOG 4010	Landscape Biogeochemistry	3
GEOG 4240	Applied Geomorphology	3
GEOG 4251	Fluvial Geomorphology	3
GEOG 4270	Glacial Geomorphology	3
GEOG 4280	Environmental Hydrology	4
GEOG 4305	Water Quality and Resources	3
GEOG 4720	Climate Change: Causes, Impacts and Solutions	3
GEOG 4731	Mountain Biogeography	4
GEOG 4740	Soil Science and Geography	3

Ancillary Courses

Introductory Biology or Chemistry Sequences

Code	Title	Hours
<i>Take one sequence of either general biology (BIOL 2051 and 2061 with labs) or general chemistry (CHEM 2031 and 2061 with labs). If applying to the MS in Environmental Sciences program, students are advised to take both sequences.</i>		
<i>General Biology</i>		
BIOL 2010 & BIOL 2011	Organisms to Ecosystems (Gen Bio) and Organisms to Ecosystems Lab (Gen Bio)	4
BIOL 2020 & BIOL 2021	Molecules to Cells (Gen Bio) and Molecules to Cells Lab (Gen Bio)	4
<i>General Chemistry</i>		
CHEM 2031 & CHEM 2038	General Chemistry I and General Chemistry Laboratory I	4
CHEM 2061 & CHEM 2068	General Chemistry II and General Chemistry Laboratory II	5

Upper-Division Biology or Chemistry

Code	Title	Hours
<i>Take one upper-division Biology or Chemistry course related to the student's Environmental Science interest.</i>		
<i>Biology</i>		
BIOL 3074	Human Reproductive Biology	3
BIOL 3104	Behavioral Genetics	3
BIOL 3124	Introduction to Molecular Biology	3
BIOL 3225	Human Physiology	4
BIOL 3244	Human Anatomy	5
BIOL 3330	Plant Diversity	3
BIOL 3411	Principles of Ecology	3
BIOL 3445	Introduction to Evolution	3
BIOL 3521	Vertebrate Biology	3
BIOL 3525	Parasitology	3
BIOL 3611	General Cell Biology	3
BIOL 3621	Introduction to Immunology	3
BIOL 3640	Mammalogy	4

BIOL 3654	General Microbiology	5
BIOL 3674	Endocrinology	3
BIOL 3763	Biostatistics	4
BIOL 3804	Developmental Biology	3
BIOL 3832	General Genetics	3
BIOL 4024	Introduction to Biotechnology	3
BIOL 4052	Advanced Ecology	3
BIOL 4053	Disease Ecology	3
BIOL 4055	Virology	3
BIOL 4064	Cell Biology of Disease	3
BIOL 4126	Molecular Genetics	3
BIOL 4128	Topics in Molecular Biology	3
BIOL 4134	Human Genetics	3
BIOL 4144	Medical Microbiology	3
BIOL 4154	Conservation Biology	3
BIOL 4165	Neurobiology	3
BIOL 4225	Genomics and Bioinformatics	3
BIOL 4250	Mechanisms of Animal Behavior	3
BIOL 4335	Plant Science	4
BIOL 4345	Flora of Colorado	4
BIOL 4415	Microbial Ecology	3
BIOL 4425	Biogeography	3
BIOL 4430	Introduction to Spatial Ecology	3
BIOL 4460	Environmental Toxicology	3
BIOL 4464	Exercise Physiology	3
BIOL 4475	Mechanisms of Human Pathology	3
BIOL 4494	Population and Evolutionary Genetics	3
BIOL 4550	Cell Signaling	3
BIOL 4622	Topics in Immunology	3
BIOL 4634	Biology of Cancer	3
BIOL 4815	Structural Biology of Neurodegenerative Diseases	3
BIOL 4825	Biochemistry of Metabolic Disease	3
BIOL 4835	Biochemistry of Gene Regulation and Cancer	3
BIOL 4974	Advanced Evolution	3

<i>Chemistry</i>		
CHEM 3011	Inorganic Chemistry	3
CHEM 3111	Analytical Chemistry	3
CHEM 3411	Organic Chemistry I	4
CHEM 3421	Organic Chemistry II	4
CHEM 3481	Majors Organic Chemistry I	4
CHEM 3491	Majors Organic Chemistry II	4
CHEM 3810	Biochemistry	4
CHEM 4010	Advanced Inorganic Chemistry	3
CHEM 4110	Advanced Analytical Chemistry	3
CHEM 4121	Instrumental Analysis	3
CHEM 4221	Practical Applications of Spectroscopy	3
CHEM 4310	Advanced Organic Chemistry	3
CHEM 4421	Cannabis Chemistry	3
CHEM 4500	Foundations of Physical Chemistry	3
CHEM 4510	Computational Chemistry	3
CHEM 4511	Physical Chemistry: Thermodynamics and Kinetics	3
CHEM 4521	Physical Chemistry: Quantum and Spectroscopy	3

CHEM 4530	Advanced Physical Chemistry	3
CHEM 4600	Advanced Topics in Chemistry	3
CHEM 4700	Environmental Chemistry	3
CHEM 4810	General Biochemistry I	3
CHEM 4815	Structural Biology of Neurodegenerative Diseases	3
CHEM 4820	General Biochemistry II	3
CHEM 4825	Biochemistry of Metabolic Disease	3
CHEM 4835	Biochemistry of Gene Regulation and Cancer	3
CHEM 4845	Molecular Modeling and Drug Design	3
CHEM 4860	Bioinorganic Chemistry: Bioinorganic compounds in medicine	3

To learn more about the Student Learning Outcomes for this program, please visit our website (<https://clas.ucdenver.edu/ges/programs/bachelor-arts/learning-goals-outcomes/>).

To review the Degree Map for this program, please visit our website (<https://www.ucdenver.edu/student/advising/undergraduate/degree-maps/clas/>).