

APPLIED GEOGRAPHY & GEOSPATIAL SCIENCE, MA

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

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Web site: MS in Environmental Sciences

Introduction

Across United States and globally, balancing environmental preservation with economic development along and social well-being has created a rising demand for broadly trained individuals who can identify and understand pressing social and environmental issues, collect and analyze relevant data, and develop and implement innovative solutions. Graduates of the MA program in Applied Geography and Geospatial Science learn the knowledge, training, and tools to become leaders in this rapidly growing field.

The program's research focus is human-environment interaction, a longstanding hallmark of the discipline of Geography. Within this area of critical geographic inquiry, the program emphasizes geospatial science, a federally recognized STEM subject area that includes geographic information systems (GIS) as well as computer cartography, remotely sensed image analysis, and spatial statistics. Students apply their geospatial research skills in the context of hands-on, faculty-led research projects that stress professional development through community engagement and interactive service learning.

Financial Aid

There are three types of financial aid available: teaching assistant student hourly positions; research assistantship positions funded by grants to specific program faculty; and the regular package of financial aid (primarily loans) available through the financial aid office on the Denver campus. Incoming students will be automatically considered for program-distributed assistance at the time of admission to the program. Continuing students will be regularly apprised of available aid and positions. All other aid should be requested through the

CU Denver Financial Aid Office
Student Commons Building, 5th floor
Campus Box 125
P.O. Box 173364
Denver, CO 80217-3364
Telephone: 303-315-1850

Internships

Students in the Applied Geography & Geospatial Science MA program are strongly encouraged to contact the Experiential Learning Center (<https://www.ucdenver.edu/lynxconnect/internships/>) for internships and paid positions related to geographical sciences. The Experiential Learning Center is located in the Tivoli Student Union, Suite 260. Telephone: 303-556-2250. Many students have had internships in federal

agencies, such as the U.S. Environmental Protection Agency and the U.S. Geological Survey.

These program requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences 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 program advisor to confirm the best plans of study before finalizing them.

Graduate Education Policies and Procedures apply to this program.

Program Requirements

The program is offered by the faculty of the Department of Geography and Environmental Sciences in the College of Liberal Arts and Sciences.

Students undertake 36 credit hours over a two-year period. These 36 hours include required core classes, a required service learning studio, required geo-spatial science methods coursework and electives. Students can elect to undertake either of two tracks: the first "coursework" track involves additional elective courses, whereas the second "thesis" track involves required courses, including preparation of a written thesis.

1. Students must complete a minimum of 36 credit hours from approved courses.
2. Students must complete a minimum of 36 graduate (5000-level) or higher credit hours from approved courses.
3. Students must earn a minimum grade of B (3.0) or better in all core courses, a B- (2.7) in all other courses applied to the degree and must achieve a minimum cumulative program GPA of 3.0. Courses taken using P+/P/F or S/U grading cannot apply to degree requirements.
4. Students must complete all coursework with CU Denver faculty.

Program Restrictions, Allowances and Recommendations

1. Many of the electives have prerequisites# students must have met these requirements in order to take the course.
2. Courses applied to either a certificate* or an MA degree may later be applied toward the other if all pertinent coursework is completed within a five year time period.
3. Students should fill out and submit all relevant department forms for their files. Importantly, all petitions for course substitutions and identification of where courses fit as electives, with the subsequent approval/denial, should be submitted to this file.
4. By the end of the first semester, each student should identify and declare whether or not s/he is pursuing the thesis or non-thesis option. If intending to pursue the thesis option, the student should identify and gain agreement from a content advisor for guiding the thesis, filling out and submitting the appropriate departmental form.
5. Many of the electives have pre-requisites; students must have met these requirements in order to take the course.
6. Students may transfer up to nine hours of approved graduate-level credit into the program. These courses must be approved by the Graduate Director and they may not replace core courses.
7. Students may count up to six credit hours of independent, with a maximum of 3-credit hours per independent study towards elective credit in the major as approved by the Graduate Director. No more than 3 credit hours of independent study may be taken with the same instructor and they may not be taken in the same term.

8. Students may count up to six credit hours of internship in total, but 3-credit hours per internship and per entity (sponsorship may be with same professor sponsor)
9. Students may not count 4000-level courses towards electives in the program; this may be petitioned to the Graduate Committee in exceptional cases.
10. Students may take a maximum of two online courses, or petition to the GES Graduate Committee beyond two.
11. Students may enroll in thesis preparation and writing hours only after submission of signed committee form, which requires approval of the thesis proposal.
12. Students electing to follow the MA Thesis Track can allocate 3 to 6 credits toward their thesis work. If they choose to allocate six credits toward the thesis work, three of those credits can replace a three credits elective course requirement.
13. Students will not receive a grade for thesis preparation and writing hours until the thesis is successfully defended.
14. Students must follow the graduate admissions deadlines for submission of paperwork for the graduation application, comprehensive exam, and any other deadlines. Links to these can be found on the GES/MS website.
15. Work submitted for the environmental sciences options must have a grade of B (3.0) or better.
16. GES offers Geospatial, Environmental Education, and Urban Agriculture independent graduate certificates. These certificates may be earned without entrance into the MS in environmental sciences program. (See the Geographic Information Science Graduate Certificate (<http://catalog.ucdenver.edu/cu-denver/graduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/geographic-information-science-graduate-certificate/>), Sustainable Urban Agriculture Graduate Certificate (<http://catalog.ucdenver.edu/cu-denver/graduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/sustainable-urban-agriculture-graduate-certificate/>), and Environmental Science Education Graduate Certificate (<http://catalog.ucdenver.edu/cu-denver/graduate/schools-colleges-departments/college-liberal-arts-sciences/geography-environmental-sciences/environmental-science-education-graduate-certificate/>) descriptions.)

| Code | Title | Hours |
|--|--|-----------|
| Complete the following required courses: | | 10 |
| GEOG 5050 | Applied Spatial Statistics | |
| GEOG 6300 | Foundations Seminar in Human-Environmental Interaction | |
| GEOG 6800 | Community-Based Research Practicum | |
| Complete 12 credit hours of Geospatial Science and Methods Courses: | | 12 |
| CSCI 5559 | Database Systems | |
| CVEN 5382 | Geospatial Data Development | |
| CVEN 5383 | GIS Analysis | |
| CVEN 5385 | GIS Relational Database Systems | |
| ENVS 6200 | Risk Assessment | |
| ENVS 6220 | Toxicology | |
| ENVS 6230 | Environmental Epidemiology | |
| GEOG 5060 | Remote Sensing I: Introduction to Environmental Remote Sensing | |
| GEOG 5070 | Remote Sensing II: Advanced Remote Sensing | |

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|--|--|-----------|
| GEOG 5081 | Cartography | |
| GEOG 5085 | GIS Applications for the Urban Environment | |
| GEOG 5090 | Environmental Modeling with Geographic Information Systems | |
| GEOG 5091 | Open Source Software for Geospatial Applications | |
| GEOG 5092 | GIS Programming and Automation | |
| GEOG 5095 | Deploying GIS Functionality on the Web | |
| GEOG 5235 | GIS Applications in the Health Sciences | |
| Complete a minimum of eight credit hours of elective courses, with a minimum of one course from the approved Human Geography course list and one course from the approved Physical Geography course list:¹ | | 8 |
| Human Geography (p. 2) | | |
| Physical Geography (p. 2) | | |
| Complete the Thesis or Non-Thesis option to complete the degree. | | 6 |
| Thesis Option (p. 3) | | |
| Non-Thesis Option (p. 3) | | |
| Total Hours | | 36 |

¹ Students may take up to six credit hours outside the Department of Geography & Environmental Sciences, with advisor approval.

Human Geography

| Code | Title | Hours |
|-----------|--|-------|
| ENVS 5305 | Water Quality and Resources | |
| ENVS 5340 | Equity & Culture in Science Education: Local/Global | |
| ENVS 5450 | Urban Food and Agriculture: Perspectives and Research | |
| GEOG 5230 | Hazard Mitigation and Vulnerability Assessment | |
| GEOG 5265 | Sustainability in Resources Management | |
| GEOG 5300 | Children's Geographies | |
| GEOG 5335 | Climate Change & Society | |
| GEOG 5350 | Environment and Society in the American Past | |
| GEOG 5420 | The Politics of Nature | |
| GEOG 5440 | Science, Policy and the Environment | |
| GEOG 5640 | Urban Geography: Denver and the U.S. | |
| GEOG 5680 | Urban Sustainability and Resiliency: Perspectives and Practice | |
| GEOG 5710 | Disasters, Climate Change, and Health | |

Physical Geography

| Code | Title | Hours |
|-----------|---|-------|
| ENVS 5020 | Earth Environments and Human Impacts | |
| ENVS 5280 | Environmental Hydrology | |
| ENVS 5731 | Mountain Biogeography | |
| GEOG 5240 | Applied Geomorphology | |
| GEOG 5251 | Fluvial Geomorphology | |
| GEOG 5270 | Glacial Geomorphology | |
| GEOG 5740 | Soil Science and Geography | |
| | or ENVS 5740 Soil Science and Geography | |
| GEOG 5995 | Global Study Topics | |

Thesis Option

| Code | Title | Hours |
|-------------------------------|-----------------|-------|
| <i>Complete the following</i> | | 6 |
| GEOG 6750 | Research Design | |
| GEOG 6950 | Master's Thesis | |

Non-Thesis Option

| Code | Title | Hours |
|--|-------|-------|
| <i>Complete additional elective credit hours from the Human and Physical Geography lists. Additional electives may be approved by the student's advisor.</i> | | 6 |

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