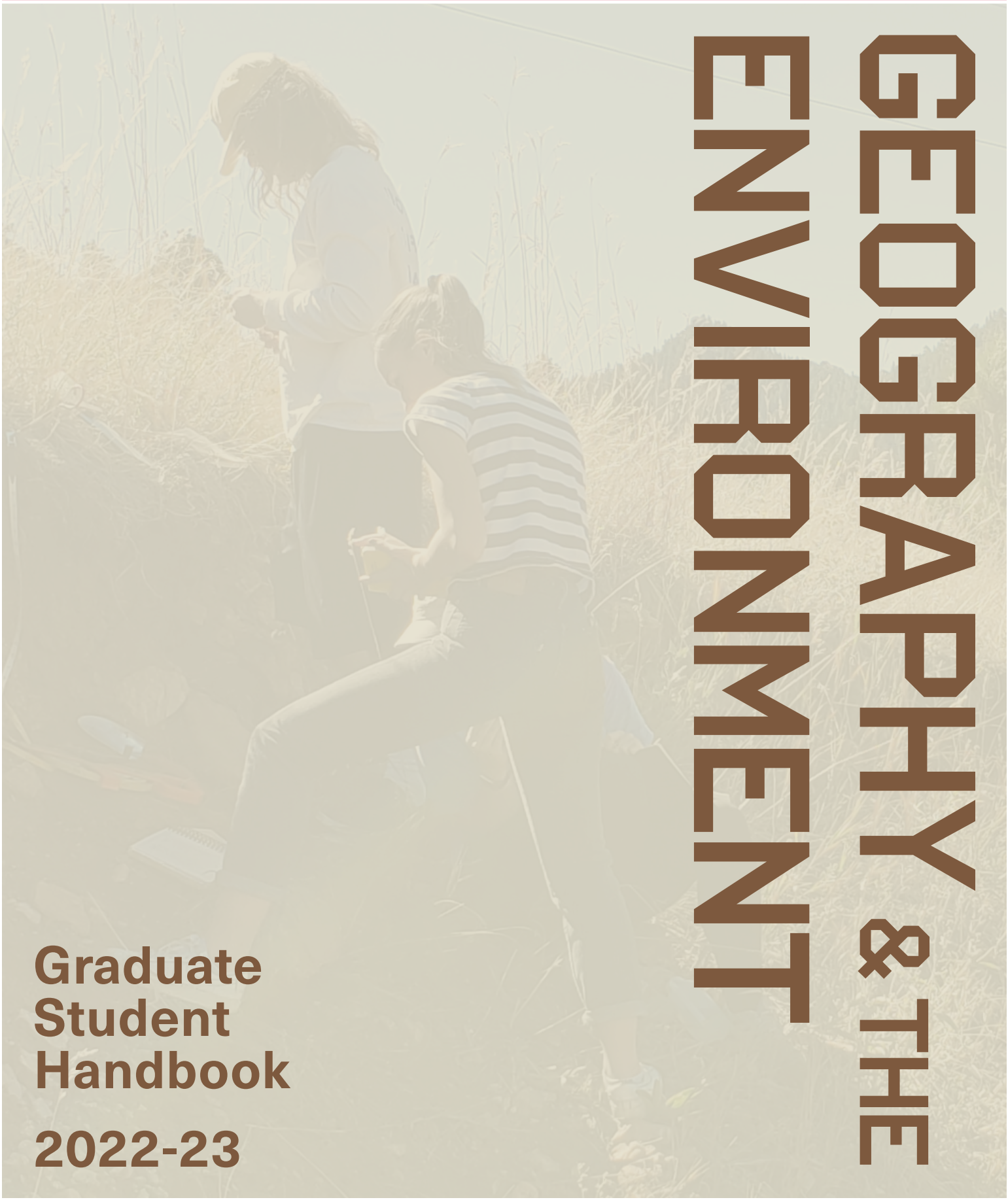
UNIVERSITY OF DENVER

College of Natural Sciences & Mathematics



GEOGRAPHY & THE ENVIRONMENT

Graduate Student Handbook

2022-23

Graduate Student Handbook, 2022-23

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Department of Geography & the Environment

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College of Natural Sciences & Mathematics

UNIVERSITY OF DENVER

Introduction

Welcome to DU's Department of Geography & the Environment!

The department faculty applauds your desire and commitment to furthering your knowledge and expertise in the field of Geography. We infer that your past studies or professional experiences have demonstrated the value of this pursuit. We share your enthusiasm.

The graduate program of the Department of Geography & the Environment at the University of Denver includes a relatively small number of carefully chosen students. We admit only those whom we believe can successfully complete the program and whose interests are similar to our own. Consequently, you will find yourself surrounded by intelligent and motivated colleagues. You will develop friendships among the students and faculty alike that will last a lifetime. This fringe benefit of graduate education should not be underestimated.

Periodically, we review the content of our graduate programs to ensure that they meet the needs and expectations of our students. The program requirements presented in this handbook reflect our most recent collective judgment concerning the best method of meeting your needs and expectations. You will find flexibility within a basic structure so that you, together with your advisor, can tailor your particular program to best suit your personal and professional objectives. Regardless of the route that you select, you will find your program challenging. This is how it should be if you are to develop and refine your knowledge of geography. Upon completion of your program and graduation, you will be truly proud of your accomplishment, and so will we.

A Note on the Post-Graduate Transition

As an undergraduate, your role was largely a passive one – you studied the material covered in the syllabus, took the exams, and completed the assignments, on which basis the professor measured your progress and determined a grade. As a graduate student you will find the expectations to be quite different. You have entered the ranks of professional geographers, and as such you are no longer in the business of merely absorbing knowledge; you are expected to create it as well. In addition to the requisite coursework, you will engage in independent and original research on a topic of your choosing. The faculty will not select research questions, techniques, or approaches for you, but rather will provide advice and comment from the perspective of experience. Furthermore, the initiative at all stages will need to come from you. Making this transition is perhaps the most difficult – but most rewarding – part of being a graduate student.

As you undertake this process, a critical relationship will be the one you develop with your advisor. Your choice of advisor should be well considered and based on such factors as research interests, expertise, background and training, and current commitments. Think of your advisor not as your boss, editor, or probation officer, but as a skilled guide who can facilitate your successful passage through a degree program, provided you do your part to meet that challenge.

Colloquium

Department faculty make a great effort to bring in scholars from around the country and world to engage us in the latest developments in the many areas of geography. We do this as part of our scholarship and because we never tire of learning. Presentations by these scholars normally take place on Thursday afternoons from 4 to 5 pm. After the lectures, we engage our visitors in social events. The Colloquium calendar also includes the

Professional Development series specifically for graduate students. As part of your professionalization and participation in the department, we expect you to attend lectures and post-lecture discussions. Please ensure you leave space in your calendars for all of these lectures and enroll in GEOG 4900 every quarter.

Geography at the University of Denver

The Department of Geography and the Environment at the University of Denver marked its 75th anniversary in 2020, and has been offering graduate degrees for the better part of that time period. The department currently offers MA and Ph.D. degrees in Geography, an MS degree in Geographic Information Science (GISc), and in 2008 added an online MS degree in GISc. With a full-time faculty of seventeen, we have strengths in several substantive areas and maintain a good balance among human geography, physical geography, human-environment interaction, and geographic information science. The on-campus graduate population typically ranges from 35 to 40 students, roughly two-thirds of whom are in residence at any given time. Another 50 graduate students are engaged in the department's MS GISc online degree program. Our modest size affords many advantages – small classes, personal attention, excellent financial aid opportunities, job placement assistance, and the chance to develop rewarding relationships with faculty, staff, and other students. The department also boasts outstanding facilities and resources, with newly renovated and updated offices, labs, and classroom space, and offers numerous opportunities for field training through a range of trips and courses, both in the U.S. and abroad.

Graduates from this department have enjoyed considerable success in securing employment related to their training and interests. Recent alumni with human geography emphases are currently working for state and local planning agencies, developers, consulting firms, and private industries in Colorado and elsewhere. Those with interest in physical geography have found employment in federal and state agencies, environmental consulting firms, and private enterprises. Alumni completing the MS GISc degree are now employed by planning and environmental consultants and GIS companies. In addition, numerous graduates of the doctoral program hold faculty teaching positions with colleges and universities around the country.

Facilities and Resources

Departmental

The Department of Geography and the Environment is located in the Keck Geosciences Center, occupying the ground level, first, and second floors of Boettcher Science Center West. This facility contains faculty, staff, and graduate student offices, the David B. Longbrake GIS laboratories, a geospatial visualization lab, a remote sensing lab, a conference room, a coffee room, and a library. The department has additional space in Olin Hall, including a pollen lab, a USDA-certified soils lab, an instructional lab, and the Hoyt minerals collection. The department also has access to field vehicles – four 12-passenger vans, and an eight-passenger Ford Explorer – as well as a wide variety of field equipment. Graduate student mailboxes are located in the main office on the first floor, as are teaching supplies, audio-visual equipment, a photocopier, and a fax machine.

University-Wide

Located about a one-hour drive west of Denver, the University maintains a field research facility on Mount Evans. The Mount Evans Field Station, built in the Arapaho National Forest at an elevation of 10,600 ft., consists of a large dormitory with kitchen facilities, separate laboratory facilities, and a weather station.

The University Libraries (https://library.du.edu/) system contains millions of physical and digital materials housed in four libraries (Anderson Academic Commons, Law Library, Music Library, Hampden Center). Additional materials are available through cooperative lending agreements from local, regional, or national universities through Prospector and Interlibrary Loan. Students are granted borrowing privileges at all of the cooperating libraries. They also have access to libraries at the United States Geological Survey (USGS) and the National Center for Atmospheric Research (NCAR).

Faculty and Staff

The Department of Geography and the Environment has an exceptional Faculty who are among the leading experts in their chosen areas of geographic specialization. The entire faculty and staff are committed to providing the best educational environment for students.

The faculty of this department also takes pride in their teaching ability. Each has earned recognition for excellence in their work in the classroom. Several of the full-time faculty have received University awards for distinguished teaching, and one faculty member has received the Distinguished Teaching Achievement Award presented by the National Council for Geographic Education.

Faculty

E. ERIC BOSCHMANN - Ph.D., The Ohio State University, 2008. Associate Professor and Director of Graduate Programs. Cities, Mobility and Accessibility, Urban Sustainability, Mixed Methods, GIS.

J. MICHAEL DANIELS - Ph.D., University of Wisconsin-Madison, 2002. Professor. Geomorphology, Environmental Change, Soils, Hydrology.

ANDREW R. GOETZ - Ph.D., The Ohio State University, 1987. Professor. Transportation, Urban Geography and Planning, Economic Geography.

HILLARY HAMANN - Ph.D., University of Colorado-Boulder, 2002. Teaching Professor. Physical Geography, Water Resources, Conservation.

HELEN HAZEN – Ph.D., University of Minnesota- Twin Cities, 2006. Teaching Professor. Environmental Conservation, Human-Environment Interactions, Health Geography

STEVEN R. HICK - M.A., University of Missouri, 1983. Professor of the Practice and Director of MS-GISc Online Program & Geographic Technology Applications Center (GTAC) Director. Geographic Information Science (GISc), Project Management, Cartography, Criminology.

MICHAEL J. KEABLES - Ph.D., University of Wisconsin-Madison, 1986. Associate Professor and Chair. Climatology, Water Resources, Climate Variability.

MICHAEL W. KERWIN - Ph.D., University of Colorado, 2002. Associate Professor and Director Environmental Science Program. Quaternary Geology, Dendroclimatology.

KRISTOPHER KUZERA - Ph.D., San Diego State University, University of California, Santa Barbara Joint Doctoral Program, 2011. Teaching Associate Professor and Internship Program Director. Geographic Information Science (GISc), Remote Sensing, Health/Medical Geography, Climate and Climate Change, Cartography.

JING LI – Ph.D., George Mason University, 2012. Associate Professor. 3D/4D Geovisualization and Visual Analytics, Spatial Temporal Modeling and Analysis, Web-based Geographic Information Science (GISc), High Performance Geocomputation, Spatial Cloud Computing.

HANSON NYANTAKYI-FRIMPONG – Ph.D., The University of Western Ontario, Canada, 2014, Associate Professor. Human-Environment Interactions, Climate Change, Environmental Justice, Africa.

REBECCA L. POWELL - Ph.D., University of California-Santa Barbara, 2006. Associate Professor. Human-Environment Interaction, Remote Sensing, Statistics, Land Use/Land Cover Change, Geographic Information Science (GISc).

DONALD G. SULLIVAN - Ph.D., University of California at Berkeley, 1989, Associate Professor. Quaternary Studies, Biogeography, Environmental Change.

PAUL C. SUTTON - Ph.D., University of California-Santa Barbara, 1999. Professor. Geographic Information Science (GISc), Ecological Economics, Human-Environment Interactions, Population Geography.

MATTHEW J. TAYLOR - Ph.D., Arizona State University, 2003. Professor. Latin American Geography, Political Ecology.

SEAN TIERNEY – Ph.D., University of Denver, 2010. Visiting Teaching Assistant Professor. Urban Geography, Transportation Geography, and Urban Sustainability.

ERIKA TRIGOSO RUBIO - Ph.D., University of Oxford, 2010. Teaching Professor. Vulnerability and adaptation to climate change, Geographic Information Science (GISc), Latin America.

GUIMING ZHANG - Ph.D., University of Wisconsin-Madison, 2018. Assistant Professor. Geographic Information Science (GISc), Volunteered Geographic Information (VGI), Geospatial Big Data Analytics, Predictive Mapping, Geocomputing.

Adjunct Faculty

HEATHER BRAINERD HICKS – Ph.D., Colorado State University, 2019. Adjunct Professor. Geographic Information Science and Cartography.

FRITZ GANZ – J.D., University of Vermont Law School. Adjunct Professor. Environmental and Natural Resources Law.

ELIZABETH HENRY – Ph.D., University of Iowa, 1998. Adjunct Professor. Environmental Journalism and Film.

CHAD KING – Ph.D., University of Arizona, 2005. Adjunct Professor. Sustainability.

JEFFERY KREEGER – Ph.D., University of South Carolina, 2017. Adjunct Professor. Geographic Information Science.

MICHELLE MORAN-TAYLOR - Ph.D., Arizona State University, 2003. Adjunct Professor. Cultural Geography, Cultural Ecology, and Human Migration.

MARTHA A. NAREY - Ph.D., University of Denver, 1999. Adjunct Professor. Dendrochronology, Drought Climatology, and Paleoenvironments.

UTTIYO RAYCHAUDHURI – Ph.D., University of Georgia, 2006. Adjunct Professor. Forestry, Natural Resources, and Sustainability.

Emeritus Faculty

DAVID B. LONGBRAKE - Ph.D., University of Iowa, 1972. Professor Emeritus. Statistics, Urban Geography, Land Use Planning, Urban and Regional Development, Computer Mapping, GIS, GPS.

TERRENCE J. TOY - Ph.D., University of Denver, 1973. Professor Emeritus. Geomorphology, Erosion, Reclamation of Disturbed Lands.

Staff

PATRICIA GUERRA - Administrative Assistant to the Chair.

WILL KINISTON - Geography Administrative Assistant and Graphic Artist.

Degree Programs

The Department of Geography & the Environment offers degree programs at both the master's and doctorate levels.

Ph.D. Degree in Geography

Areas of emphasis at the doctorate level include: biogeography; climatology; cultural geography; economic geography; geographic information science; geomorphology; global change; human environment interaction; Latin America; population geography; Quaternary studies; transportation geography; and urban geography.

The doctoral degree requires 72-quarter hours of study beyond the master's degree, competency in two research tools, comprehensive exam and a dissertation.

M.A. Degree in Geography

A Master of Arts degree in Geography requires 45 quarter hours of course work and a research thesis.

Areas of specialization include:
Physical Geography: Biogeography, Climatology, Geomorphology, Quaternary Studies, Soils, Hydrology;
Human Geography: Cultural Geography, Economic Geography, Development, Population Geography, Transportation Geography, Urban Geography, Urban and Regional Planning;
Human-Environment Interaction: Global Change, Land Use, Latin America, Africa, Natural Resources, Political Ecology, Sustainability;
Geographic Information Science: Geo-visualization, GIS, Remote Sensing, Spatial Analysis.

M.S. Degree in Geographic Information Science (GISc)

A Master of Science degree in Geographic Information Science (MS-GISc) requires 48 quarter hours of course work and completion of a Capstone project.

The Geography Department faculty recognizes the emerging importance of geographic information science and the importance of integrating advanced study in geographic information systems, remote sensing, and global positioning systems with traditional studies in human and physical geography. The Master of Science degree complements our traditional graduate degree offerings.

M.S. Degree in Geographic Information Science (GISc) Online

The Master of Science online degree in Geographic Information Science (MS-GISc). The same as the on-campus version, but this degree is designed to meet the needs of students unable to move to Denver or otherwise participate in a traditional on campus program.

This degree requires 48-quarter hours including satisfactory completion of a Capstone Project.

Certificate of Advanced Study in GIS

The University of Denver also offers a 24-credit hour GIS certificate program, through the University College, leading to the Certificate of Advanced Study in GIS. This program was designed by the Department of Geography and the Environment. The GIS certificate program offers working professionals the opportunity to acquire the background information and hands-on expertise necessary to capitalize on this powerful, emerging technology. Credit earned in the certificate program may be applied towards the MS degree as a part of the admission process. MS-GISc prerequisites may also be completed with GIS certificate courses with instructor approval.

Designing Your Program of Study

The department prides itself in the ability to tailor individual programs to complement the student's interest within a basic framework of practical requirements and departmental emphases. Research projects may be theoretical or applied, and continuous interaction with faculty members is strongly encouraged. Enrichment of the student's program is possible through course work in other University departments and by arrangement of internships with federal, state, and local agencies, in addition to non-governmental organizations in the Denver metropolitan area.

List of Courses

Human Geography Courses

GEOG 3300: Cultural Geography
3310: Culture, Nature, Environment
3320: Global Change - Human Dimensions
3330: Political Geography
3340: Geographies of Migration
3350: Qualitative Methods in Geography
3410: Urban Applications in GIS
3470: GIS & Env. Health Geography
3700: Environment and Development
3755: Geography of Health
3800: Geography of Colorado
3825: Geographies of Intl. Dev. in Africa

GEOG 3830: Nat. Resource Analysis and Planning
3890: Ecological Economics
3930: Cultural Geog Sem: Political Ecology
3940: Urban Geography Seminar
4400: Urban Landscapes
4420: Urban & Regional Planning
4425: Urban Sustainability
4440: Urban Transportation Planning
4445: Sustainability & Transportation
4450: Transportation & Mobilities
4460: Air Transportation and Tourism
4810: Geography of Latin America

ENVI 3000: Environmental Law

Physical Geography Courses

GEOG 3500: Reconstructing Quaternary Env.
3510: Biogeography
3520: Geography of Soils
3550: Topics in Physical Geography
3560: Fluvial Geomorphology
3600: Meteorology
3610: Climatology

GEOG 3630: Dendroclimatology
3640: Climate Change & Society
3710: Env. Change in E. Mediterranean
3720: Mountain Env. and Sustainability
3800: Geography of Colorado
3870: Water Resource and Sustainability
3910: Geomorphology
3950: Physical Geography Seminar
3955: Pollen Analysis Seminar

GEOL 3100: Environmental Geology
3200: Sedimentology/Stratigraphy
3520: Erosion Process and Measurement
3540: Hydrology

Geographic Information Sciences Courses

GEOG 3000: Advanced Geographic Statistics
3010: Geographic Information Analysis
3040: GPS for Resource Mapping
3100/4110: Geospatial Data
3110: Introduction to GIS Modeling
3120: Environmental/GIS Mod
3130: GIS Programming with Python
3140: GIS Database Design

GEOG 3150: GIS Project Management
3200: Remote Sensing
3230: Advanced Remote Sensing
3410: Urban Application in GIS
3701: Topics in Geographic Info. Science
3860: GIS Applications in Natural Resources
3920: Remote Sensing Seminar
4170: Geospatial Analysis & Project Mgmt.

Degree Program Requirements

Requirements for Students Without Prior Degrees in Geography

The MA and PhD graduate degree programs in Geography are based upon the assumption that persons starting the program have an adequate background in the discipline. It is therefore necessary that persons without such a background obtain the equivalent knowledge. In such cases, students and their faculty advisor will devise a plan for this acquisition of appropriate background knowledge in Geography. In addition, a student enrolled in the doctoral program is expected to have obtained significant research experience as part of a master's program, and such experience must be obtained before the student will be eligible to pursue the doctoral degree.

Doctoral Program

Research experience

A quality research paper of substantial scope must be completed by any student who has not completed a thesis or substantial research as part of his/her master's degree. The paper is to be completed and evaluated by the appropriate faculty no later than the close of the third quarter of residence in the program. The paper should include a substantive literature review, problem statement, hypotheses, description of the research methods, tests of hypotheses, and conclusions drawn from the analysis. In essence, the paper should be a mini thesis. No more than 5 quarter hours of credit may be earned in the process of completing the research deficiency.

Transfer credit from Master's Degree

The faculty will identify the courses to be accepted in transfer up to a maximum of 45-quarter hours. It is possible, however, that the total credit hours accepted in transfer could be less than 45-quarter hours.

Ph.D. Program in Geography

The Basic Structure

Your program will consist of formal course work and independent study through which you develop and prepare your independent research, i.e., dissertation. You will work with a faculty advisor and a faculty committee to determine the appropriate course work and nature of the independent study.

Faculty Advisor

Soon after beginning your graduate program, you will need to identify a faculty member who will serve as your academic advisor. The advisor should be a full-time tenured or tenure-track faculty member in the Department of Geography and the Environment with a research record and interest appropriate to your proposed research area of specialization. The advisor assists you in developing the program of course work, oversees the dissertation, and keeps the department chair and departmental director of graduate programs informed of your progress. **Once a faculty member has agreed to serve as your advisor, send an Advisor Acceptance email to the Graduate Program Chair, the prospective advisor, and Will Kiniston**.

Faculty Committee

Once you have identified an advisor and a working research topic, you and your advisor should begin to assemble the rest of your faculty committee. The PhD candidate's dissertation committee is comprised of at least four members: an advisor and three other committee members. All members of the committee must be full-time appointed faculty at DU and have research records appropriate to the student's area of specialization. Faculty from appropriately related units who hold the terminal degree in their field may serve on the committee as long as the candidate's graduate unit has the majority representation and a 2/3 majority of the committee hold the earned doctorate.

The committee approves the student's program of study no later than the beginning of the third quarter of the student's program.

Students should refer to the Doctoral Dissertation requirements, policies, and procedures as specified in the Graduate Bulletin (http://bulletin.du.edu/) for more information.

Overview of Doctoral Program Process

Soon after identifying a faculty advisor, and assembling a committee, the student meets with the advisor and committee to discuss and create his or her program. Four factors are given consideration: the student's interest, the student's background breadth, the level of competence needed to conduct a dissertation in a certain topical area, and departmental and university requirements. The program established will make it clear to the student what he or she must do to earn the Ph.D. The two research tool requirements that the student plans to complete must be identified at this time. Although the program and dissertation proposal subsequently may be modified in a minor way, both the student and the advisor/committee should assume that it will be adhered to in the main. Should the student's area of interest for dissertation research change significantly, the student's program will be subject to departmental review, and a determination will be made whether the department can support the new topic. If so, a new program and a new committee must be formed. If not, the department may decide that the student's program be terminated.

The advisor certifies to the departmental director of graduate programs that the student's program has been established. On this basis, the student will then be advanced to preliminary candidacy. After completing GEOG 4020, and when the student's advisor ascertains that the student's dissertation proposal is ready to be presented, the student shall organize and schedule a dissertation proposal defense with his/her committee. Once the dissertation proposal has been approved and all relevant coursework has been completed, the student is eligible to take the comprehensive examination. The student must discuss the format, scheduling, and content of the exam with his/her advisor and committee. Once the advisor provides consent, the student will schedule the exam with each of the members of the committee. The student's advisor must also inform the departmental director of graduate programs concerning the scheduling and results of the comprehensive exam.

After all required coursework (including tool requirements), approved dissertation proposal, and comprehensive examination have been completed, the student is advanced to final candidacy for the PhD degree, and attains ABD (All But Dissertation) status. The student then completes the dissertation in consultation with his/her advisor. The members of the student's committee other than the advisor will normally act as second and third, etc., readers of the dissertation. Their comments and suggestions should be given to the committee chairperson (advisor) rather than to the student directly. The committee chairperson may thus incorporate the comments of other readers into his/her own so that the student is working with one critique instead of several. Once the advisor and committee members have given approval to the dissertation draft, the student will schedule the final oral examination with each member of the committee, including the outside representative from the University. Once the student passes the final oral examination, the dissertation is formally approved the student is eligible to receive the PhD degree.

General Requirements

The general requirements for the Doctor of Philosophy (PhD) degree can be found on the Department of Geography & the Environment website. You should refer to this site periodically.

The general requirements for a PhD degree in Geography are summarized here.

Credit hours

1. A minimum of 117-quarter hours of graduate credit.
2. A maximum of 45-quarter hours of graduate credit earned for the master's degree may be applied toward the Ph.D.
3. No more than 15-quarter hours of graduate credit will be accepted in transfer from another institution. This does not include course work completed as part of a master's degree. Any transfer of credits from other institutions has to be requested during the first quarter of entrance.
4. At least 32-quarter hours must be earned in topical courses offered by the Department of Geography & the Environment
5. At least 12-quarter hours of course work must be earned in courses in allied discipline(s) and/or equivalent hours of internship experience to fulfill the cognate requirement.
6. A total of 4-quarter hours must be counted toward the degree for GEOG 4000 (Fundamental Geographic Perspectives). This course, offered in the autumn quarter, is an introduction to the historical foundations and current research developments in Geography and its major subfields.

7. A total of 4-quarter hours must be counted toward the degree for GEOG 4020 (Geographic Research Methodology). This course is offered in the winter quarter, and focuses on the purpose, goals, and methods of research as conducted in the field of Geography.
8. A total of 4-quarter hours must be counted toward the degree for GEOG 3000 Advanced Geographic Statistics. This course is offered in the spring quarter and provides a fundamental basis in understanding and using statistical techniques in geographic research.
9. Register for GEOG 4900 (0 credits) every quarter (fall, winter, spring) and attend departmental colloquium.
10. A maximum of 25 quarter hours may be counted toward the degree for GEOG 5995 (Independent Dissertation Research). **These course hours can be taken any time after the dissertation proposal has been approved and represents credit hours taken to complete the dissertation**.

Academic Performance

1. Only courses with a grade of "B" or better may be counted towards the degree. If a grade of “B” or better is not attained in a course, the student must re-register and re-take the course (with a grade of “B” or better earned). If the course is not a required course, the student may substitute with another course rather than retaking the same course. A grade of B- does not meet the University criteria of “B” or better.
2. Should a student's grade point average fall below 3.00, the student is placed on academic probation and continuation in the program is subject to department review and possible termination.
3. If a student receives a grade of less than a B in two or more courses, they will be automatically terminated from the program. (B- is less than B)

Residency

1. A minimum of 57-quarter hours must be earned at the University of Denver.
2. Students must be in residence at the University of Denver for a minimum of six quarters, including at least two full-time consecutive quarters. Full-time student status requires registration for 8 hours per quarter.

Examinations

PhD Research Proposal Presentation

Each student is required to prepare and present a research proposal to be formally approved by the student's faculty committee. There is no standard or required structure, format, or length for proposals. Each proposal is unique to the student, their program, and their research topic. Students should work with their advisor and consult other proposal examples to decide what is most suitable. Doctoral students must present their proposal for the committee approval by the time that the student would be finishing his/her substantive course work; this is equivalent to having completed 91-quarter hours toward the PhD degree (including 45 hours from Master’s program). If a doctoral student does not have an approved proposal by the end of the quarter in which the student has completed 91-quarter hours, the student is placed on academic probation and is given one additional quarter to have a proposal approved by the student's committee. **If the proposal has not been approved by the end of the quarter following the completion of 91-quarter hours of PhD degree coursework, the student's program will be terminated due to insufficient progress toward the degree**. The student may, however, file a petition before the eighth week of that quarter requesting an extension of probationary status for one additional quarter. If this petition is granted, the student must have a proposal approved by the eighth week of the next quarter to continue in the program. If not, the program is automatically terminated. If a student has encountered severe

extenuating circumstances beyond the student's control, a petition may be filed to extend probationary status subject to approval by the Department Chair and the departmental Director of Graduate Programs.

Comprehensive exam

This exam, which includes both written and oral parts, is designed to evaluate the student's work at the University of Denver. This exam is usually scheduled after all substantive course work has been completed, the dissertation proposal has been approved, and at least three quarters prior to expected graduation. Students should consult with their advisor and committee members to achieve a greater understanding of what will be on the exam. The written portion of the exam can be taken in one of two formats: 1) a written examination conducted in the department usually taken over two days, lasting four hours each day, or 2) a take-home examination in which the student has 5 days to complete the exam. An oral examination is held two weeks after the written exam has been completed. A candidate who fails one or all parts of the comprehensive exam may petition the department for re-examination. Re-examination, if granted by the department, may not be scheduled until the succeeding quarter, and may not be retaken more than one time.

Final exam

Upon completion of course work, approved proposal, comprehensive exam, and the dissertation, each student will undergo a final oral examination. A final examination may not be scheduled until at least the second quarter following the quarter in which the comprehensive exam was successfully completed (the summer may count as a quarter; though, no examinations should be scheduled during the summer). The final oral examination is to be conducted at least two weeks before the end of the quarter in which the degree is to be awarded. This exam is usually about two hours in length and is composed of a 15 to 20-minute presentation by the student followed by questions from the committee. The examining committee consists of no fewer than four members chosen from the faculty of the department or related cognate disciplines. There is also a non-voting outside member of the examining committee who serves as the chair for the final examination and must be a tenured or tenure-track faculty member at the University serving as the University's representative.

Dissertation Formats

There are two options for dissertation formats: the traditional dissertation monograph or the three-article dissertation. In consultation with their advisor, the doctoral student will decide which format to prepare and defend. General expectations for each format are outlined below.

Traditional dissertation monograph

1. The dissertation monograph constitutes the traditional dissertation format structured around multiple sequential chapters.
2. The basic structure of a monograph dissertation includes these five chapters: Introduction, Literature Review, Methods, Analysis/Results, Discussion and Conclusion. Additional chapters may be included as needed. A single bibliography appears at the end. Appendixes, prefaces, and acknowledgements may be appropriate.
3. The dissertation is completed when approved by the dissertation committee, including all required revisions, and accepted by the Office of Graduate Education.
4. The final approved dissertation must conform to the Office of Graduate Education's official *Thesis and Dissertation Formatting Requirements*.
5. Students planning to eventually publish from their dissertation should consider requesting an embargo of their work upon final submission to the Office of Graduate Education.

Three-paper dissertation

1. The three-paper dissertation is comprised of at least three stand-alone publishable articles related to a coherent research problem. The minimum number of articles to be included in the dissertation is three. Students can include more as deemed necessary by the advisor and/or dissertation committee.
2. The basic structure of a three-paper dissertation is generally comprised of:
    a. An introductory chapter that establishes the broader problem / topic of study, states the research questions, summarizes the three stand-alone papers and how they fit together, and provides relevant literature review and discussion of methods employed in the dissertation research but are not found in any of the three articles.
    b. Three stand-alone article chapters of original research, with their own structure of literature review, methods, analysis, results, discussion/conclusion, and references, following the requirements of targeted journals.
    c. A concluding chapter that reviews and synthesizes the findings of the three stand-alone papers, identifies main contributions, limitations, and directions for future research.
    d. Prefaces/acknowledgements, appendixes, and other complementary sections may be included as needed.
3. The articles submitted for the dissertation defense must be of publishable quality. The student's advisor and/or dissertation committee decides whether the articles meet this standard. Though highly encouraged, there is no expectation that any articles must be published, accepted, or submitted prior to the defense.
4. The entire dissertation is initially and primarily written by the doctoral student. The student must be first author on all articles. As first authors, students are responsible for leading the project in most ways. Sole authorship of articles is also encouraged.
5. Any article published or accepted prior to the defense can be included but must represent work undertaken while the student is enrolled in the PhD program and is directly related to the research problem of the dissertation.
6. At the time of defense, if the dissertation committee requests additional analyses or information that do not fit into the three papers, the committee can request that they appear as Appendices in the final document.
7. The dissertation is completed when approved by the dissertation committee, including all required revisions, and accepted by the Office of Graduate Education.
8. The final approved dissertation must conform to the Office of Graduate Education's official Thesis and Dissertation Formatting Requirements, which includes specific requirements for 3-Paper Dissertation Structure and Arrangement.
9. For any article published before the dissertation defense, the student must request copyright permission from the publishing journal to include the paper in their dissertation and inform the journal that the dissertation may be made publicly available. Obtaining permission is required by U.S. copyright laws.
10. If papers are not yet published prior to the submission of the dissertation, students should consider requesting an embargo of their work upon final submission to the Office of Graduate Education.

Specific Requirements

1. A total of 72-quarter hours of earned credit beyond the master's degree.
2. **Required Courses**: Once a student has been accepted in the doctoral program, these courses can only be taken at the University of Denver. If a grade of "B" or better is not earned in any of these required

courses, the student must re-register and re-take the course. Failure to earn a grade of "B" or better a second time will result in automatic termination of the student's program.

GEOG 4000: Fundamental Geographic Perspectives	4 hrs
GEOG 4020: Geographic Research Methods	4 hrs
GEOG 3000: Advanced Geographic Statistics	4 hrs
GEOG 4900: Graduate Colloquium (every quarter)	0 hrs

3. **Topical Courses**: A minimum of 32-quarter hours of GEOG courses at 3000 or higher level (see page 7). (GEOG 5991 Independent Study can count towards topical course requirements if approved by the student's advisor.)
4. **Tools Requirement**: Each candidate must demonstrate proficiency in two tools required for research and advanced study. Tool requirements are determined by the candidate's advisor and committee, and may include one or more languages, statistical methods, laboratory, or other research skills. GEOG 3000 Advanced Geographic Statistics counts as one of the tools needed.
5. Completion of a minimum of two research seminars. Successful completion of GEOG 4000 Fundamental Geographic Perspectives will count as one of the seminars needed.
6. Completion of study in a cognate field to be approved by the advisor and committee. At least 12-quarter hours of coursework in allied disciplines and/or equivalent hours of internship experience must be obtained.
7. Completion of additional course work to reach a total of 72-quarter hours. (The above requirements are minimums and will be exceeded in cases where inadequate background or unsatisfactory performance exists.)
8. Completion and committee approval of a dissertation proposal.
9. Successful completion of the comprehensive examination.
10. Completion and successful defense of a doctoral dissertation.

Specific Procedures

1. The new student is encouraged to identify an advisor soon after beginning the program. Shortly thereafter, the student and advisor should begin to assemble the student's committee. This should occur during the student's first quarter and should not occur later than the end of the student's second quarter.
2. The student is advanced to preliminary candidacy with the establishment of a program of study, including identification of research tools and the general research topic of the dissertation, in consultation with the advisor and committee. This should occur no later than the beginning of the third quarter of the student's program.
3. The student completes the majority of the course work in the program and is certified by the advisor on the completion of two tool requirements. These are established by the advisor/committee.
4. Each quarter PhD students will receive a Degree Summary Sheet that outlines completion of degree requirements. It is the students' responsibility to work with their advisor and ensure courses are categorized appropriately (e.g., 'cognate', 'tools').
5. The student in association with his or her advisor identifies a dissertation topic. **The student presents a formal research proposal orally to the committee for constructive critique. A written proposal is to be handed to all members of the faculty committee *at least two weeks* before the presentation**. This presentation is normally given during the third quarter of the PhD student's second year OR no later than the quarter in which the student completes a total of 91-quarter hours in course work. As soon as is

practical following the oral presentation, the student's advisor will inform him/her of the committee's assessment of the presentation and what, if any, changes need to be incorporated in the research project in order to make it acceptable to the committee (see Flow Chart). As soon as the dissertation proposal has been approved, the Thesis/Dissertation Oral Defense Committee Recommendation form should be submitted to the Office of Graduate Education (http://www.du.edu/currentstudents/graduates/graduationinformation.html).

6. The student in association with his or her advisor identifies a dissertation topic. **The student presents a formal research proposal orally to the committee for constructive critique. A written proposal is to be handed to all members of the faculty committee at least two weeks before the presentation**. This presentation is normally given during the third quarter of the PhD student's second year OR no later than the quarter in which the student completes a total of 91-quarter hours in course work. As soon as is practical following the oral presentation, the student's advisor will inform him/her of the committee's assessment of the presentation and what, if any, changes need to be incorporated in the research project in order to make it acceptable to the committee (see Flow Chart). As soon as the dissertation proposal has been approved, the Thesis/Dissertation Oral Defense Committee Recommendation form should be submitted to the Office of Graduate Education (http://www.du.edu/currentstudents/graduates/graduationinformation.html).
7. The student completes the comprehensive exam successfully. At this point, the student advances to final candidacy. This should occur before the student has progressed very far with dissertation research after the successful completion of the above-mentioned requirements, and **no later than three quarters prior to the expected date for completion of the degree**.
8. The advisor should be provided with draft copies of the dissertation as its writing progresses, according to the wishes of the advisor. The readers of the student's dissertation should also be given the opportunity to view the dissertation in draft form. All suggestions and comments should flow through the advisor to the student. In no case will the dissertation be produced in final form until the other readers have been given the opportunity to review the draft and transmit their remarks to the student's advisor. The advisor pronounces the dissertation acceptable for final preparation. **The final draft, including tables, graphics and illustrations in final form, must be available to the final exam committee *at least three weeks* prior to the final oral exam**. This means that the final draft, as approved by the advisor, must be made available to the committee before the fifth week (midpoint) of the quarter in which the final oral exam is scheduled. Also, the completed Schedule of Oral Examination form must be received in the Office of Graduate Education at least three weeks prior to the exam (before the fifth week of the quarter) (see Flow Chart).
9. A final oral examination which serves as a defense of the dissertation itself is required. This should be taken before the deadline established by the Office of Graduate Education for that quarter in which the degree is to be awarded, which is two weeks before the end of the quarter. The Oral Defense Committee must have an outside chairperson from the University but outside the Department. The outside chairperson must be a tenured or tenure-track faculty member from DU. It is the student's responsibility, with assistance from the student's advisor, to arrange for the outside chairperson.
10. **The dissertation in its final approved form, including necessary revisions identified in the final oral exam, must be submitted to the Office of Graduate Education no later than one week before the end of the quarter (the ninth week of the quarter)**.

Notes

The Office of Graduate Education at the University establishes various deadlines for graduation at the end of a particular academic quarter. The student must be aware of these deadlines. In any event, the dissertation must be filed with the Office of Graduate Education no later than seven years from the time a student has started the doctoral program. ***NO EXTENSIONS WILL BE GRANTED BY THE GEOGRAPHY DEPARTMENT***. See the "Office of Graduate Education and Graduate Bulletin" section near the end of this Handbook.

Continuous Enrollment (CE) is for students who have completed all required coursework (with the exception of independent research hours 4995/5995/5993) and are pursuing academic work/research necessary to complete a degree. CE is designed primarily for students who are working on a thesis, dissertation, or research paper/capstone. Consult the Graduate Bulletin (http://bulletin.du.edu/graduate/) for detailed information.

Since the University hires most of its faculty on nine-month appointments, the summer months constitute off-duty time for faculty when their own research and other business are conducted. Accordingly, there will be no graduate student examinations, either oral or written, during the period between spring graduation and September 1 of that calendar year.

Timetable

First Year in Program

Autumn Quarter

GEOG 4000: Fundamental Geographic Perspectives	4 hrs
Course work	4 hrs
GEOG 4900*	

Winter Quarter

GEOG 3000: Advanced Geographic Statistics	4 hrs
Course work	4 hrs
GEOG 4900*	

Spring Quarter

GEOG 4020: Geographic Research Methods	4 hrs
(it is possible to take this course in 2nd year)	
Course work	4 hrs
GEOG 4900*	

Second Year in Program

Autumn Quarter

Course work	8 hrs
GEOG 4900*	

Winter Quarter

Course work	8 hrs
GEOG 4900*	

Spring Quarter

Course work	8 hrs
GEOG 4900*	

Third Year in Program

Autumn Quarter

Additional courses as needed	8 hrs
GEOG 4900*	

Winter Quarter

Additional courses as needed	8 hrs
GEOG 4900*	

Spring Quarter

Additional courses as needed	8 hrs
GEOG 4900*	

* Students are expected to enroll in GEOG 4900 and attend Colloquium events in all three academic quarters each year.

Graduation

Students should refer to the Doctoral Dissertation requirements, policies, and procedures as specified in the Graduate Bulletin (http://bulletin.du.edu/).

M.A. Program in Geography

The Basic Structure

Your program will consist of formal course work and independent study through which you develop and prepare your independent research, i.e. thesis. It is this research component that largely distinguishes your graduate program here. You will work with a faculty advisor and a faculty committee to determine the appropriate course work and nature of the independent study.

Faculty Advisor

Soon after beginning your graduate program, you will need to identify a faculty member who will serve as your advisor. The advisor should be a full-time tenured or tenure-track faculty member in the Geography Department with a research record and interest appropriate to your proposed research area of specialization. The advisor assists you in developing the program of course work, oversees the thesis, maintains your student file, and keeps the department chair and director of graduate programs informed of your progress. **Once a faculty member has agreed to serve as your advisor, send an Advisor Acceptance email to the Graduate Program Chair, the prospective advisor, and Will Kiniston**.

Faculty Committee

Once you have identified an advisor and a working research topic, you and your advisor should begin to assemble the rest of your faculty committee. The Master's degree candidate's thesis committee is comprised of at least three members: an advisor and two other committee members. All members of the committee must be full-time appointed faculty at DU and have research records appropriate to the student's area of specialization. DU faculty from appropriately related units who hold the terminal degree in their field may serve on the committee as long as the candidate's graduate unit has the majority representation.

The committee should approve your program of study no later than the beginning of the second quarter of your program of study.

Students should refer to the Master's Program requirements, policies, and procedures as specified in the Graduate Bulletin (http://bulletin.du.edu/).

General Requirements

The general requirements for the Master of Arts (MA) degree can be found on the Department of Geography & the Environment website. You should refer to this site periodically.

The general requirements for the MA in Geography are summarized here.

Credit hours

1. A minimum of 45-quarter hours is required.
2. At least 33-quarter hours must be in courses taken within the Department of Geography and the Environment.
3. No more than 10-quarter hours will be accepted in transfer from another institution. Any transfer of credits from other institutions must be requested during the first quarter of entrance.

4. A total of 4-quarter hours must be counted toward the degree for GEOG 4000 (Fundamental Geographic Perspectives). This course, offered in the autumn quarter, is an introduction to the historical foundations and current research developments in Geography and its major sub-fields.
   A total of 4-quarter hours must be counted toward the degree for GEOG 4020 (Geographic Research Methods). This course is offered in the winter quarter, and focuses on the purpose, goals, and methods of research as conducted in the field of Geography.
5. A total of 4-quarter hours must be counted toward the degree for GEOG 3000 Advanced Geographic Statistics. This course is offered in the spring quarter and provides a fundamental basis in understanding and using statistical techniques in geographic research.
6. Register for GEOG 4900 (0 credits) every quarter (fall, winter, spring) and attend departmental colloquium.
7. A maximum of 5-quarter hours may be counted toward the degree for GEOG 4995 (Independent Research). This course can be taken any time after the thesis proposal has been approved and represents credit hours taken to complete the thesis.

Academic Performance

1. Only courses with a grade of "B" or better may be counted towards the degree. If a grade of “B” or better is not attained in a course, the student must re-register and re-take the course (with a grade of “B” or better earned). If the course is not a required course, the student may substitute with another course rather than retaking the same course. A grade of B- does not meet the University criteria of “B” or better.
2. Should the cumulative grade point average fall below 3.00, a student is placed on academic probation and the student's continuation in the program is subject to departmental review and possible termination.
3. If a student receives a grade of less than a B in two or more courses, they will be automatically terminated from the program. (B- is less than B).

Residency

Enrollment as a graduate student at the University of Denver for at least three quarters is required for graduation.

Examinations

MA Thesis Proposal Presentation

Each student is required to prepare and present a research proposal that is formally approved by the student's faculty committee. There is no standard or required structure, format, or length for proposals. Each proposal is unique to the student, their program, and their research topic. Students should work with their advisor and consult other proposal examples to decide what is most suitable. Master’s thesis students must present proposals for committee approval by the time the student would be finishing his/her substantive course work; this is equivalent to having completed 32-quarter hours toward the Master’s degree. If a master’s thesis student does not have an approved proposal by the end of the quarter in which the student has completed 32-quarter hours, the student is placed on academic probation and is given one additional quarter to have a proposal approved by the student's committee. **If the proposal has not been approved by the end of the quarter following the student’s completion of 32- quarter hours of master’s degree coursework, the student's program will be terminated due to insufficient progress toward the degree**. The student may, however, file a petition before the eighth week of that quarter requesting an extension of probationary status for one additional quarter. If this petition is granted, the student must have a proposal approved by the eighth week of the next

quarter to continue in the program. If not, the program is automatically terminated. If a student has encountered severe extenuating circumstances beyond the student's control, a petition may be filed to extend probationary status subject to approval by the departmental Director of Graduate Programs and Department Chair

Final (oral) Examination
Upon completion of required course work, approved proposal, and the thesis, each student will undergo a final oral examination. A final examination may not be scheduled until at least the second quarter following the quarter in which the research proposal was approved (The summer may count as a quarter; though, no examinations should be scheduled in the summer). The final oral examination is to be conducted at least two weeks before the end of the quarter in which the degree is to be awarded (prior to eighth week of the quarter). This exam is usually about two hours in length and is composed of a 15 to 20-minute presentation by the student, followed by questions from the committee. In all cases, the exam will address course work and the thesis research. The examining committee is composed of the student's committee and a tenured or tenure-track University faculty member serving as the University's representative.

The core of the MA degree is the formal course work and the thesis research. A master's thesis is the product of rather extensive scientific research and must be prepared according to an established format. The thesis should be of publishable quality, though professional publication is not a requirement. Several papers from master's theses completed in this department, however, have been published in professional journals.

Specific Requirements

1. A total of 45 quarter hours of earned credit.
2. **Required Courses**: If a student has not taken or received prior credit for any of these courses, upon entering the MA program, these courses can only be taken in the Department of Geography & the Environment at the University of Denver. If a grade of B or better is not earned in any of these required courses, the student must register for and take the course again. Failure to earn a grade of B or better a second time will result in automatic termination of the student's program.

GEOG 4000: Fundamental Geographic Perspectives	4 hrs
GEOG 4020: Geographic Research Methods	4 hrs
GEOG 3000: Advanced Geographic Statistics	4 hrs
GEOG 4900: Graduate Colloquium (every quarter)	0 hrs

3. Additional transfer, departmental, and other university courses are needed to reach total of 45 hrs. (The above requirements are minimums and will be exceeded in cases where inadequate background or unsatisfactory performance exists.)
4. Completion of an acceptable proposal and thesis.

Specific Procedures

1. Upon entering the graduate program, each student is initially advised by the Director of Graduate Programs for the department. The student should identify a Thesis Program advisor during the student's first quarter in the program. Shortly thereafter, the student and her/his advisor should begin to assemble the student's committee.

2. Soon after identifying a faculty advisor, the student meets with the advisor to create his or her program of study.
3. The student is advanced to degree candidacy after the program has been planned, a timetable has been arranged, and the research proposal has been presented and accepted.
4. Although the program subsequently may be modified in a minor way, both the student and the advisor/committee should assume that it will be followed in the main. Should the student's area of interest for thesis research change significantly, the student's program will be subject to committee and departmental review, and a determination will be made whether the department can support the new topic. If so, a new program and a new committee must be formed. If not, the department may decide that the student's program be terminated.
5. A written proposal is usually developed during the second and third quarters of attendance and must be accepted by the student's committee. An oral presentation of the proposal to the committee is required and should take place by the end of the third quarter of attendance, or, no later than the quarter in which the student completes a total of 32-quarter hours of course work. **The written proposal must be provided to all faculty committee members at least two weeks prior to the presentation**. Following the oral presentation and review of the written proposal, the committee will convey their impressions and recommendations directly to the student's advisor. The advisor will then meet with the student and together they will determine any changes necessary to render the research proposal acceptable to the committee (see Flow Chart). As soon as the thesis proposal has been approved the Thesis/Dissertation Oral Defense Committee Recommendation form should be submitted to the Office of Graduate Education.
6. Regarding the course GEOG 4995 Independent Research (Thesis): the student may not register for this course until successful completion of GEOG 4020 and acceptance of the proposal by the committee.
7. Review of thesis: The thesis is directed by the student's program advisor and evaluated by the Faculty Committee. All suggestions and comments should flow through the advisor to the student. The advisor pronounces the thesis acceptable for final preparation. The final draft, including tables, graphics and illustrations in final form, must be available to the final exam committee **at least three weeks** prior to the final oral exam. This means that the final draft, as approved by the advisor, must be made available to the committee before the fifth week (midpoint) of the quarter in which the final oral exam is scheduled. Also, the completed Schedule of Oral Examination form must be received in the Office of Graduate Education at least three weeks prior to the exam (see Flow Chart).
8. A final oral examination is required. The exam will focus on both course work and serve as a defense of the thesis. It should be taken before the deadline established by the Office of Graduate Education for the quarter in which the degree is to be awarded, which is two weeks before the end of the quarter. The Oral Defense Committee must have an outside chairperson from the University but outside the Department. The outside chairperson must be a tenured or tenure-track faculty member from DU. It is the student's responsibility, with assistance from the student's advisor, to arrange for the outside chairperson.
9. **The thesis in its final approved form, including necessary revisions identified in the final oral exam, must be in the Office of Graduate Education no later than one week before the end of the quarter (the ninth week of the quarter)**.

Notes

The Office of Graduate Education at the University establishes various deadlines for graduation at the end of a particular academic quarter. The student must be aware of these deadlines. In any event, the thesis must be filed with the Office of Graduate Education no later than five years from the time a student has started the master's

program. ***NO EXTENSIONS WILL BE GRANTED BY THE GEOGRAPHY DEPARTMENT***. See the "Office of Graduate Education and Graduate Bulletin" section near the end of this Handbook.

Continuous Enrollment (CE) is for students who have completed all required coursework (with the exception of independent research hours 4995/5995/5993) and are pursuing academic work/research necessary to complete a degree. CE is designed primarily for students who are working on a thesis, dissertation, or research paper/capstone. Consult the Graduate Bulletin (http://bulletin.du.edu/graduate/) for detailed information.

Since the University hires most of its faculty on nine-month appointments, the summer months constitute off-duty time for faculty when their own research and other business is conducted. Accordingly, there will be no graduate student examinations, either oral or written, during the period between spring graduation and September 1 of that calendar year.

Timetable

The timetable presented below is designed for students entering the program in the autumn quarter of the academic year. Students starting their programs in other quarters may have to make certain adjustments to fulfill degree requirements. Full-time student status requires at least 8 hours per quarter.

Standard Course Schedule for MA Students

First Year in Program

Autumn Quarter

GEOG 4000: Fundamental Geographic Perspectives	4 hours
Topical course	4 hours
GEOG 4900*	

Winter Quarter

GEOG 3000: Advanced Geographic Statistics	4 hours
Topical course	4 hours
GEOG 4900*	

Spring Quarter

GEOG 4020: Geographic Research Methodology	4 hours
Topical course	4 hours
GEOG 4900*	

Total First Year 24 - 30 hours

* Students must enroll in GEOG 4900 and attend Colloquium events in all three quarters.

Acceptance of a proposal is encouraged by the end of the first academic year.

Second Year in Program

Autumn Quarter

Additional coursework to meet min. requirements	7-9 hours

GEOG 4900*

Winter Quarter

Additional course work as necessary	4-5 hours
GEOG 4995: Independent Research**	4-5 hours
GEOG 4900*	

Spring Quarter

Additional course work as necessary	7-9 hours
GEOG 4900*	
Completion of thesis	

* Students must enroll in GEOG 4900 and attend Colloquium events in all three quarters.

** This course can be taken in Spring or Winter quarter as necessary.

Graduation

Students should refer to Master's Program requirements, policies, and procedures as specified in the Graduate Bulletin (http://bulletin.du.edu/).

M.S. in Geographic Information Science

MS-GISc Program Objective

The MS-GISc is designed to provide students with a foundation of topical knowledge and a variety of analytical and applied skills required for advanced degrees or employment in a variety of professional careers in which the application of spatial data is important.

The Basic Structure

Your program will consist of formal course work and a final project. The project requires you to work with a faculty advisor and a faculty committee to determine the appropriate course work and nature of the project, as follows.

Faculty Advisor

Before beginning MS GIS, you will need to identify a project and a faculty member who is willing to work with you on the project and who will serve as your advisor. Typically, your advisor will be a faculty member whose geographic specialization most closely matches your own area of interest. The advisor will assist you in developing the program of course work, oversees the project, and keeps the department chair and director of graduate programs informed of your progress. Once a faculty member has agreed to serve as your advisor, send an Advisor Acceptance email to: the Graduate Program Chair, the prospective advisor, and Will Kiniston.

Faculty Committee

Once you have identified an advisor and a working topic, you and your advisor should begin to assemble the rest of your faculty committee. The MS-GISc committee is comprised of at least two members: an advisor and one other committee member. The advisor and at least one committee member must be full-time or adjunct faculty members in the Geography Department who should have expertise in the candidate's selected area of research. A third member of the MS-GISc project committee can be from outside the department (from another department, university, company, or agency), but with expertise in the candidate's selected area of research. At least one member of the committee must be the faculty member who is the beneficiary of the project or a representative ("the client") of the external organization involved in your project.

General Requirements

The general requirements for the Master of Science (MS-GISc) degree can be found on the Department of Geography & the Environment website. You should refer to this site periodically.

The requirements for the MS-GISc are summarized here.

Credit hours

1. A minimum of 48-quarter hours is required.
2. At least 24 quarter hours must be completed in courses taken within the Department of Geography & the Environment at the University of Denver.
3. No more than 10-quarter hours will be accepted in transfer from another institution.
4. No more than 24-quarter hours will be accepted in transfer from the University College GIS Certificate Program. The student must have earned a grade of B or better to transfer the course.

Credit transfer from University College - the following courses transfer towards the MS-GIS requirements:

GIS 4700 Introduction to Remote Sensing, 4.0 hrs for GEOG 3200 Remote Sensing
GIS 3140 GIS Database Design, 4.0 hrs for GEOG 3140 Database Design*
GIS 4150 GIS Project Design, 4.0 hrs for GEOG 3150 GIS Project Management**

Other GIS Certificate courses will only transfer as electives.

* GIS 3140 GIS Database Design will continue to be accepted for students that have taken the course, but this course is no longer offered in the GIS Certificate Program.

** GIS 4150 GIS Project Design will continue to be accepted for students that have taken the course, but this course is no longer offered in the GIS Certificate Program

5. If the student is transferring credits from another institution and University College credits, both must add up to a maximum of 24-quarter hours, but only 10-quarter hours will be accepted from another institution outside of DU. Only courses with a grade of “B” or better may be transferred into the master’s degree.

Academic Performance

Only courses with a grade of "B" or better may be counted towards the degree. If a grade of “B” or better is not attained in a course, the student must re-register and re-take the course (with a grade of “B” or better earned). If the course is not a required course, the student may substitute with another course rather than retaking the same course. A grade of B- does not meet the University criteria of “B” or better.
Should the cumulative grade point average fall below 3.00, a student is placed on academic probation and the student's continuation in the program is subject to departmental review and possible termination.
If a student receives a grade of less than a B in two or more courses, they will be automatically terminated from the program. (B- is less than B).

Residency

Each candidate for the Master of Science degree must fulfill a minimum of 3 quarters enrolled as a graduate student at the University of Denver.

Examinations

Project Proposal Presentation

Each student is required to prepare and present a project proposal that is formally approved by the student's faculty committee. There is no standard or required structure, format, or length for proposals. Each proposal is unique to the student, their program, and their research topic. Students should work with their advisor and consult other proposal examples to decide what is most suitable. Project students in the MS-GISc program must present proposals for committee approval by the time the student would be finishing his/her substantive course work; this is equivalent to having completed 32-quarter hours toward the master’s degree. If a master’s project student does not have an approved proposal by the end of the quarter in which the student has completed 32-quarter hours, the student is placed on academic probation, and is given one additional quarter to have a

proposal approved by the student's committee. **If the proposal has not been approved by the end of the quarter following the student's completion of 32 quarter-hours of Master's Degree coursework, the student's program will be terminated due to insufficient progress toward the degree**. The student may, however, file a petition before the eighth week of that quarter requesting an extension of probationary status for one additional quarter. If this petition is granted, the student must have a proposal approved by the eighth week of the next quarter to continue in the program. If not, the program is automatically terminated. If a student has encountered severe extenuating circumstances beyond the student's control, a petition may be filed to extend probationary status subject to approval by the Department Chair and departmental Director of Graduate Programs.

Final Project Presentation

Upon completion of required course work, approved proposal, and the project, each student will make a final project presentation. A final project presentation may not be scheduled until at least the second quarter following the quarter in which the project proposal was approved (The summer may count as a quarter; though, no presentations should be scheduled during summer). The final project presentation is to be conducted at least two weeks before the end of the quarter in which the degree is to be awarded (prior to eighth week of the quarter). The student's presentation should be approximately 15 to 20 minutes in length, followed by questions from the committee. The entire defense should be no longer than 2 hours. In all cases, the presentation will address the requirements of the project/research. The examining committee is composed of the advisor, at least one other Geography faculty member, and a representative of the client organization.

Specific Requirements

Prerequisite Courses

In preparation for your graduate study in Geographic Information Science, we expect you to have a base knowledge of cartography, geographic information systems, and statistics. A body of prerequisite courses has been identified to ensure that new students meet a minimum set of skills. These courses are offered at the undergraduate level in the Department of Geography & the Environment, at the graduate level in University College at the University of Denver or are available at most universities offering degrees or concentrations in geography. New students to the graduate degree program must have completed these courses at their previous institution or enroll in the courses in their first quarters at the University of Denver to meet remedial requirements. The prerequisites identified in the following table do not count toward the MS-GISc degree credit hour requirement.

Prerequisite Courses
Geographic Statistics
Introduction to GIS

Workplace Experience

In the event that a student has acquired the prerequisite knowledge and skills in the workplace, these course requirements may be waived. Learning outcomes of prerequisite classes will be compared to the knowledge, skills, and abilities gained in the workplace to evaluate whether the prerequisite course requirements will be waived.

Basic Requirements

1. Completion of a minimum of 48-quarter hours.

Required Coursework	Credit Hours
GEOG 3000 Advanced Geographic Statistics	4
GEOG 3010 Geographic Information Analysis	4
GEOG 3140 Database Design	4
GEOG 3150 GIS Project Management	4
GEOG 3200 Remote Sensing	4
GEOG 4020 Research Methods	4
GEOG 4900 Grad. Colloquium (every quarter)	4
GEOG 4993 Capstone Project	0
Electives	20
Total	48

2. **Required Courses**: If a student has not taken or received prior credit for any of the required courses, these courses can only be taken in the Department of Geography & the Environment at the University of Denver once the student has entered the MS-GISc program. If a grade of "B" or better is not earned in any of these courses, the student must re-register and re-take the course. Failure to earn a "B" or better a second time will result in automatic termination of the student's program.
3. **Elective courses**: Each student must take a minimum of 8-quarter hours of electives in geography from any of the GEOG courses at 3000 level or above. It is strongly recommended that students take GEOG 4000 Fundamental Geographic Perspectives, offered during the fall quarter, as one of their elective courses.
4. Complete a Capstone Project.

Other Rules

1. MS on campus students may not register for courses in the online program unless it is a required course not offered on campus or with special permission by the department.
2. MS on campus students are permitted to take elective credits through University College as long as they stay within the transfer of credit requirements (24 credits must be taken with the Department of Geography & the Environment).
3. Graduate Teaching Assistants are not permitted to take courses at University College.
4. GEOG 4993 Capstone Project is equivalent to GEOG 4995 Independent Research that students in the MA program may take as part of their coursework, therefore, MS students should not register for GEOG 4995 Independent Research but instead GEOG 4991 Independent Study if they need additional credits to work on their Capstone Project (as approved by advisor)

Project

Students will be required to produce a final project of professional quality demonstrating the student's ability to apply Geographic Information Science to their chosen area of specialization.

The project should be developed on behalf of a company, agency, non- governmental organization, or faculty member who is referred to as the client. The project may be predominantly technical in nature or may focus on a more academic research component. The project must be approved by the student's "client" and committee.

The project must demonstrate mastery of one or more geo-technologies and the student should engage in all facets of the project, from design to implementation. The client should guide the student with respect to defining the scope, function, and purpose of the project, in addition to providing data and other resources needed to accomplish the defined objectives.

The client must also serve on the student's committee for the proposal and final presentation evaluations. The completed project must include the following:

1. A written report;
2. Digital and/or hard copies of data, maps, and software produced; and
3. A user guide, if appropriate.

Specific Procedures

1. Upon entering the graduate program, each student is initially advised by the Graduate Program Director for the department. The permanent advisor should be identified during the student's first quarter in the program, and then a committee should be assembled by the student and advisor.
2. Soon after identifying a faculty advisor, the student meets with the advisor to create his or her program. The student is advanced to degree candidacy after the program has been planned, a timetable has been arranged, and the project proposal has been presented and accepted by the student's committee.
3. Although the program subsequently may be modified in a minor way, both the student and the advisor/committee should assume that it will be followed. Should the student's area of interest for project research change significantly, the student's program will be subject to committee and departmental review, and a determination will be made whether the department can support the new topic. If so, a new program and a new committee must be formed. If not, the department may decide that the student's program be terminated.
4. A written proposal is usually presented to the student's committee after most course work is complete, and the student is ready to begin the project. Formal presentation of the proposal to the committee is required and should take place no later than the quarter in which the student completes a total of 32-quarter hours of course work. This written proposal must be provided to all faculty and/or committee members **at least two weeks** prior to the presentation (see Flow Chart).
5. Following the proposal presentation and review of the written proposal, the committee will convey their assessment and recommendations directly to the student's advisor. The advisor will then meet with the student and together they will determine changes necessary to render the project acceptable to the committee.
6. Regarding the course GEOG 4993 Project: The student may not register for this course until successful completion of GEOG 4020 (Geographic Research Methods) and acceptance of the proposal by the committee.
7. Review of the Project: the project is directed by the permanent advisor and evaluated by at least the two other members of the committee. Sometimes, an additional reader within the department or from another department, or from another university or agency, may be consulted to enhance the quality of the work. All suggestions and comments should flow through the advisor to the student. The advisor

pronounces the project acceptable for final preparation. The final draft, including tables, graphics and illustrations in final form, must be available to the committee **at least three weeks** prior to the final project presentation evaluation. This means that the final draft, as approved by your advisor, must be provided to the committee before the fifth week (midpoint) of the quarter in which you wish to schedule your final project presentation (see Flow Chart).

A final project evaluation is required, in which the student presents and defends the project. This must take place before the deadline established by the Office of Graduate Education for the quarter in which the degree is to be awarded, which is two weeks before the end of the quarter.

Notes

The Office of Graduate Education at the University establishes various deadlines for graduation at the end of a particular academic quarter. The student must be aware of these deadlines. In any event, the project and all other degree requirements must be completed no later than five years from the time a student has started the master's program. ***NO EXTENSIONS WILL BE GRANTED BY THE GEOGRAPHY DEPARTMENT***. See the "Office of Graduate Education and Graduate Bulletin" section near the end of this Handbook.

Continuous Enrollment (CE) is for students who have completed all required coursework (with the exception of independent research hours 4995/5995/5993) and are pursuing academic work/research necessary to complete a degree. CE is designed primarily for students who are working on a thesis, dissertation, or research paper/capstone. Consult the Graduate Bulletin (http://bulletin.du.edu/graduate/) for detailed information. MSGIS students who have completed GEOG 4993 Project Capstone will need special permission for Continuous Enrollment.

Since the University hires most of its faculty on nine-month appointments, the summer months constitute off-duty time for faculty when their own research and other business are conducted. Accordingly, there will be no graduate student examinations, either oral or written, during the period between spring graduation and September 1 of that calendar year.

Timetable

Standard Course Schedule for MS-GIS Students

First Year in Program

Fall	**Winter**	**Spring**
(4) Database Design	(4) Advanced Geographic Statistics	(4) Geographic Information Analysis
(4) Geo. Elective (Fundamental Geo. Perspectives)	(4) Geography Elective	(4) Research Methods
GEOG 4900*	GEOG 4900*	GEOG 4900*

Second Year in Program

Fall	**Winter**	**Spring**
(4) Remote Sensing	(4) Geography Elective	(4) Geography Elective
(4) GIS Project Management	(4) Elective/Specialization	(4) Project
GEOG 4900*	GEOG 4900*	GEOG 4900*

* Students must enroll in GEOG 4900 and attend Colloquium events every quarter.

Graduation

A student will not be approved for graduation until all coursework requirements and capstone project are completed and approved, and a grade is posted for GEOG 4993.

M.S. in Geographic Information Science–Online

MS-GIS Program Objective

The MS-GISc is designed to provide students with a foundation of topical knowledge and a variety of analytical and applied skills required for advanced degrees or employment in a variety of professional careers where the application of spatial data is important. s

The Basic Structure

Your program will consist of formal course work and a Capstone Project.

Faculty Advisor

Your faculty advisor will be the director of the online MS-GISc program.

General Requirements

The general requirements for the Master of Science (MS-GISc) degree can be found on our website. You should refer to this site periodically.

The requirements for the Online MS-GISc are summarized here.

Credit hours

1. A minimum of 48-quarter hours is required.
2. At least 24-quarter hours must be completed in courses taken within the Department of Geography & the Environment at the University of Denver.
3. No more than 10-quarter hours will be accepted in transfer from another Institution different from DU.
4. No more than 24-quarter hours will be accepted in transfer from the DU University College GIS Certificate Program. **The student must have earned a grade of B or better to transfer the course**.
   Credit transfer from University College: the following courses transfer towards the MS-GIS requirements:
   GIS 4700 Introduction to Remote Sensing, 4.0 hrs for GEOG 3200 Remote Sensing
5. If the student is transferring credits from another institution and University College credits, both must add up to a maximum of 24-quarter hours, but only 10-quarter hours will be accepted from another institution outside of DU. Only courses with a grade of “B” or better may be transferred into the master’s degree program.

Academic Performance

Only courses with a grade of "B" or better may be counted towards the degree. If a grade of “B” or better is not attained in a course, the student must re-register and re-take the course (with a grade of “B” or better earned). If the course is not a required course, the student may substitute with another course rather than retaking the same course. A grade of B- does not meet the University criteria of “B” or better.
Should the cumulative grade point average fall below 3.00, a student is placed on academic probation and the student's continuation in the program is subject to departmental review and possible termination.

If a student receives a grade of less than a B in two or more courses, they will be automatically terminated from the program. (Note: B- is less than B).

Residency

There is no residency requirement for online MSGISc students.

Basic Requirements

1. Completion of a minimum of 48-quarter hours.
2. Completion of a minimum of 24 Geography (GEOG)-quarter hours.
3. Up to 24-quarter hours may be transferred from the University College GIS Certificate Program. The student must have earned a grade of B or better to transfer the course.

Required Coursework	**Credit Hours**
GEOG 3000 Advanced Geographic Statistics	4
GEOG 3010 Geographic Information Analysis	4
GEOG 3140 Database Design	4
GEOG 3150 GIS Project Management	4
GEOG 3200 Remote Sensing or GIS 4700 Remote Sensing	4
GEOG 4020 Research Methods	4
GEOG 4993 Project (Capstone)	4
Total	28

If you are transferring University College GIS certificate program credit hours (Remote Sensing) to fulfill online MS-GISc requirements, the GIS course prefix hours will count towards your 24-quarter hours transferred in from the certificate program. You then must take remaining required courses from the GEOG required coursework listing. Additional electives must also be taken from the GEOG course offering.

1. **Required Courses**: If a student has not taken or received prior credit for any of the required courses, these courses can only be taken in the Department of Geography & the Environment at the University of Denver. If a grade of "B" or better is not earned in any of these courses, the student must re-register and re-take the course. Failure to earn a "B" or better a second time will result in automatic termination of the student's program.
2. **Elective courses in Geography**: Online MS-GISc students must take any remaining credit hours from the list of available online GEOG (geography) courses.
3. Complete a Capstone Project.

Other Guidelines

1. Approval of Capstone project by program director.
2. MS online students may not register for courses in the on-campus program without special permission by the department.
3. GEOG 4993 Capstone Project is equivalent to GEOG 4995 Independent Research that students in the MA program may take as part of their coursework, therefore, MS students should not register for GEOG 4995

Independent Research but instead GEOG 4991 Independent Study if they need additional credits to work on their Capstone Project (as approved by advisor).

Capstone Project[1]

Students will be required to produce a final capstone project of professional quality demonstrating the student's ability to apply geographic information science to their chosen area of interest.

The capstone project should be developed on behalf of a company, agency, non-governmental organization, or faculty member who is referred to as the client. The project may be predominantly technical in nature or focus on a research component. The student should engage in all facets of the project, from design to implementation. The client should guide the student with respect to defining the scope, function, and purpose of the project, in addition to providing data and other resources needed to accomplish the defined objectives.

The client may also serve as an outside reader for the proposal and final presentations. The completed project must include the following:

1. A written capstone report;
2. Digital copies of data, maps, and software produced as appropriate; and
3. A user guide if appropriate.

Specific Procedures

1. Students in the MS online program are advised by the online MS-GISc Program Director for the department.
2. The student communicates with the advisor to create his/her program. The student is advanced to degree candidacy after the program has been planned, a timetable has been arranged, and the project proposal has been presented and accepted.
3. Although the program subsequently may be modified in a minor way, both the student and the advisor should assume that it will be followed. Should the student's area of interest for capstone project research change significantly, the student's program will be subject to departmental review, and a determination will be made whether the department can support the new topic. If not, the department may decide that the student's program be terminated.
4. Following the capstone proposal preparation and review of the written proposal, the capstone advisor will convey their assessment and recommendations to the student. The capstone advisor will then meet with the student, and together they will determine changes necessary to render the capstone project acceptable.
5. Regarding the course GEOG 4993 Project: The student may not register for this course until successful completion of GEOG 4020 (Geographic Research Methods), this course is usually completed at the start of the academic program.

[1] A more complete capstone proposal and project document is available online to guide students through the capstone process and expectations.

6. Review of the Capstone Project: The project is directed by the capstone advisor and evaluated by the client and the online MS-GISc program director. The Capstone project production schedule is provided when the student enrolls in the Capstone class.

Notes

The Office of Graduate Education at the University establishes various deadlines for graduation at the end of a particular academic quarter. The student must be aware of these deadlines. In any event, the project and all other degree requirements must be completed no later than five years from the time a student has started the master's program. ***NO EXTENSIONS WILL BE GRANTED BY THE GEOGRAPHY DEPARTMENT***. See the "Office of Graduate Education and Graduate Bulletin" section near the end of this Handbook.

Timetable

Course Schedule for Online MS-GISc Students

Fall Quarter
GEOG 3150 GIS Project Management *
GEOG 4020 Geographic Research Methods *
GEOG 3010 Geographic Information Analysis
GEOG 4993 Capstone Project

Winter Quarter
GEOG 3000 Advanced Geographic Statistics
GEOG 3140 GIS Database Design

Spring Quarter
GEOG 3150 GIS Project Management *
GEOG 4020 Geographic Research Methods *
GEOG 3010 Geographic Information Analysis
GEOG 4993 Capstone Project

Summer Quarter
GEOG 3000 Advanced Geographic Statistics
GEOG 3140 GIS Database Design

* GEOG 3150 GIS Project Management and GEOG 4020 Geographic Research Methods should be completed prior to GEOG 4993 Capstone Project.

Note: GIS certificate program is completed after 24-quarter hours

Graduation

A student will not be approved for graduation until all coursework requirements and capstone project are completed and approved, and a grade is posted for GEOG 4993.

Policies, Standards, and Expectations

Professional conduct and adherence to the policies and standards of the Department of Geography and the Environment and the University of Denver are expected of all graduate students. The University at large considers intellectual honesty essential to its role as a community dedicated to the discovery and transmission of knowledge. Students violating this principle may forfeit their right to continue in the program. Faculty members have the right to insist on academic integrity from their students. Cheating, plagiarism, and other instances of academic dishonesty may result in a failing grade on the particular paper or project, a failing grade in the course, probation, suspension, or dismissal from the University.

Academic Performance

Only courses with a grade of "B" or better may be counted towards the degree. If a grade of “B” or better is not attained in a course, the student must re-register and re-take the course (with a grade of “B” or better earned). If the course is not a required course, the student may substitute with another course rather than retaking the same course. A grade of B- does not meet the University criteria of “B” or better.

Should a student's grade point average fall below 3.00, the student is placed on academic probation and continuation in the program is subject to department review and possible termination.

If a student receives a grade of less than a B in two or more courses, they will be automatically terminated from the program. (B- is less than B)

Satisfactory Progress toward Degree

All graduate students are expected to make timely progress toward the completion of their respective degrees. Failure to do so puts the student at risk of probation, loss of funding, or termination of program, at the discretion of the department. For master’s students pursuing the MA degree, “satisfactory progress” entails approval of the proposal by the eighth week of the quarter in which the student expects to complete **32** quarter hours of coursework. For MS/GISc students, “satisfactory progress” means approval of the project proposal by the eighth week of the quarter in which the student expects to complete **32** quarter hours. **All** master’s students, regardless of program, are also expected to complete the degree within five years of matriculation. For doctoral students, the dissertation proposal must be approved by the eighth week of the quarter in which the student expects to complete **91** quarter hours (up to 45 of which may come from a previous master’s degree), and the degree completed within seven years of the date of matriculation. Students placed on probation for failure to make satisfactory progress are granted an additional quarter to come into compliance, after which the student may have his/her funding withdrawn or be terminated from the program at the discretion of a committee composed of the Graduate Program Director, the Department Chair, and the student’s advisor. **Students anticipating that they will not meet “satisfactory progress” requirements by the end of the probationary quarter must formally petition the department's Graduate Program Director for extension of the probationary period before the eighth week of that quarter**. The deadlines for completion of degrees are absolute – 5 years for the master’s program and 7 years for the Doctoral program. **No extensions will be granted by the Department of Geography & the Environment.**

Thesis, Project, and Dissertation Requirements/Plagiarism Prevention Policy

The master's thesis or project and the doctoral dissertation are to be original texts prepared entirely by degree candidates. The University does not tolerate plagiarism for any reason. Plagiarism is the use of another person's words, ideas, or research findings without appropriate documentation, which includes citing the reference in the text and noting quotations and paraphrases clearly. This includes self-plagiarism. In addition, all degree candidates must understand that they alone do the editing of their theses and dissertations. It is acceptable for typists or colleagues to do minor editing as the result of proofreading (i.e., the correction of occasional spelling and grammatical errors). But it is entirely unacceptable for candidates to rely on anyone else to make any substantive or syntactical changes to a thesis, project, or dissertation in order to render the text in standard American English. A command of the basics of written English as might be expected for an advanced degree (master's or doctoral) is required of all degree candidates. In short, degree candidates must rely on no one other than themselves to carry out research and to prepare the text of their findings, interpretations, or creative activity. Writers of theses, projects, and dissertations requiring the use of quantitative data may resort to a special service for basic data processing but not for data analysis.

All final written projects such as dissertations, theses, capstone reports, etc. must be evaluated for plagiarism using TurnItIn:

1. The student completes the dissertation, thesis, project
2. The student runs the document through TurnItIn
3. TurnItIn produces a report
4. The student reviews the report
5. The student makes any necessary changes to the document
6. The final TurnItIn report is submitted with the document to the advisor.

Change of an incomplete grade

An Incomplete is given only when requirements for the course have not been completed because of circumstances beyond the student's control. Granting an Incomplete and finishing the course are arranged by agreement between the student and the instructor. An Incomplete is not used to permit the retaking of examinations or the completion of additional work to enhance the quality of the student's performance. Incomplete grades for all graduate students will appear on the transcript as an "I" for one year. During that year, they will have no impact on the grade point average. After one year, or at the time of graduation, remaining Incompletes will change to "F(I)" on the transcript and will be figured into the grade point average as an "F." To make up an incomplete, the student must obtain a "Change of Incomplete" form from the Registrar and submit it to the instructor along with the work remaining to be finished.

GEOG 4900

GEOG 4900, "Colloquium," is a required 0-credit course for all graduate students (except those enrolled in Continuous Enrollment). It is imperative that students enroll in GEOG 4900 every quarter. Failure to do so will result in the Office of Graduate Education evaluating that degree requirements have not been met. Students *may* be able to retroactively enroll in GEOG 4900 with the "Graduate Course Substitution or Waiver Approval Form" from the Office of Graduate Education.

Professionalism

In addition to required Graduate Colloquium events, all students are expected to conduct themselves as professionals while in the graduate program which includes participating in and taking advantage of all of the professional/educational enhancement opportunities provided through the department such as research presentations and brown bag and other forms of departmental seminars, etc. Active involvement in other departmental athletic, recreational, and social events is also encouraged.

Academic Grievances

Active students may appeal academic and student status related decisions and/or seek resolution of complaints or grievances through the Academic Grievance and Appeal Procedure during their enrollment at the University of Denver. For full details, Search for *Procedures for Academic Grievances and Appeals* in the University of Denver Graduate Bulletin.

Financial Aid

A limited number of teaching and research assistantships are awarded each year to the most promising applicants. These carry a stipend plus *full* tuition scholarship. Most of the funding opportunities are Graduate Teaching Assistantships that involve assisting professors in introductory undergraduate geography courses.

A few University scholarships and fellowships may be available to highly qualified students. In addition, federal loan and work-study programs are available for qualified students to assist with their educational expenses. More information about these financial aid opportunities is available from the Office of Financial Aid (303-871-2681). The Department of Geography & the Environment also maintains the Kuhaida Fund, from which small loans are made to graduate students needing additional financial assistance. Interested students should contact the Department Chair for further information. Lastly, part-time employment positions are often available for interested graduate students, many in the form of paid internships through federal, state or local agencies. These offer not only financial assistance but also on-the-job experience.

Office of Graduate Education & The Graduate Bulletin

Throughout your program, you will be required to adhere to policies and procedures established by the Office of Graduate Education. Complete policies and other important student information can be found on the Graduate Student Resources page at: http://www.du.edu/learn/graduates/studentresources.html.

All students should become familiar with the academic requirements, policies, and procedures, as laid out in the University of Denver *Graduate Bulletin* (http://bulletin.du.edu) with specific attention paid to the following:

- The **Doctoral Degree Requirements and Standards**: http://bulletin.du.edu/graduate/academic-requirements-policies-and-procedures/doctoral-degree-requirements/
- **The Master's Degree Requirements**: http://bulletin.du.edu/graduate/academic-requirements-policies-and-procedures/masters-degree-requirements/

Important Deadlines

As you progress through your program and prepare for graduation and degree completion, there are a number of Office of Graduate Education policies and procedures you should be familiar with. Check the Office of Graduate Education website and consult the **Thesis and Dissertation Schedule of Deadlines**. Pay close attention to the paperwork and deadline requirements of:

- Thesis/Dissertation Oral Defense Committee Recommendation Form (This form should be submitted to the Office of Graduate Education as soon as the proposal has been approved or 30 days following IRB submission but no later than the first day of the quarter in which the student expects to complete the degree.
- Schedule of Oral Defense (submit to Office of Graduate Education four weeks prior to oral defense)
- Application for Graduation (completed on PioneerWeb)

Frequently Used Forms

Some Office of Graduate Education forms include:

- Continuous Enrollment Form (must be completed every fall once student has completed all degree requirements except thesis/dissertation).
- Course Substitution or Waiver Approval Form (must be completed when a course is meeting the requirements for a different course)
- Medical Leave of Absence Form
- Leave of Absence (Personal Form)
- Application for Re-admission (must be completed when a student has not been registered for one quarter)

In some quarters, you will be required to submit forms to the Registrar's Office in order to complete your registration. These forms can be found on the "Frequently Used Forms" section of the Registrar's page at: http://www.du.edu/registrar/forms/index.html.

Some Registrar's Office forms include:

- Independent Study, Directed Study, Independent Research Form
- Experiential Learning (Internship) Registration Form

Guidelines for Graduate Teaching Assistants (GTAs)

The acceptance of a GTA position provides an opportunity to develop your teaching and communication skills and to reinforce your knowledge of various sub-fields of geography. It also carries with it considerable responsibility and obligation to maintain the quality of instruction at the introductory course level. To ensure a high quality of teaching, some procedural standardization is necessary. The expectations, however, will vary with the position and the needs of the faculty instructor. Generally speaking, you will be expected to attend class consistently, check out and operate audio-visual equipment, distribute class materials, grade coursework (lab exercises, writing assignments, quizzes and exams), and teach one or more laboratory/ discussion sections per week. The specific duties of your position will be explained to you by the faculty member supervising the course.

GTAs are expected to schedule three "office hours" per week, and should be available at those times to meet with students to discuss assignments, provide clarification of course content, accept and return labs and exercises, etc. GTAs should also be prepared to meet several times during the quarter with the instructor or course coordinator and other GTAs to discuss progress in the course and plan future activities.

GTAs must treat students in a fair, equitable, and professional manner at all times. In courses with more than one GTA, the teaching assistants should make every effort to maintain consistency of grading standards and interpretation/enforcement of course policies. If a GTA has any questions regarding interpretation or enforcement of such policies (e.g., on attendance, make-up assignments, grading practices) he or she should consult the instructor before reaching a decision.

In accordance with University policy, GTAs must keep all unreturned, graded student work (papers, exams, labs, etc.) on file for two full years, and should make such work available to students at their request, in accordance with course policies. (Some instructors do not allow students to keep exams but do permit them to review their work in the presence of the instructor or GTA.) GTAs must also keep accurate and detailed records of student performance in grade book and/or spreadsheet form, and maintain such records for two full years, should a student wish to see how he/she was evaluated in the course.

To maintain privacy, GTAs must not post grades by student name where they are available to the general public. If a GTA wishes to post grades in a public place (e.g., on an office door, outside a classroom), a truncated version of the student number, or a student "alias" should be used instead.

GTAs are expected to maintain at least a 3.5 GPA in their coursework, make exemplary progress toward their degrees (both in coursework and progress towards research milestones such as proposal defenses), and to carry out all obligations of their assistantship in a manner deemed acceptable by the department. A GTA who fails to conform to any of these expectations risks loss of funding, probation, or termination of program.

Financial aid and assistantship awards are made on a competitive basis. Each year our department receives far more applications for admission and requests for financial aid than we can accommodate. It is the policy of this department to continue to provide funding for students who demonstrate excellent scholarship, make timely progress toward the completion of their degree, contribute fully to department culture, and perform assistantship duties in an exemplary manner. Awards are reviewed on a quarterly basis, and are extended to a total of two years for master's candidates and four years for doctoral candidates, assuming all of the aforementioned conditions

are met. If any of these conditions is not met, the Department reserves the right to withhold or place conditions on a funding award. A departmental GTA evaluation committee meets on a quarterly basis to evaluate GTA performance. Typically, any GTA who is not meeting expectations will receive a written letter of warning which informs the student of why he or she has been identified as not meeting expectations and makes suggestions as to how to improve and meet expectations. If these expectations are not met in any subsequent quarters, the GTA may receive a second letter that rescinds their appointment as a GTA.

Professional Development and Travel

We encourage our graduate students to attend international, national, and regional conferences because this is part of professional development. We also realize that unexpected family/personal issues crop up from time to time that will require your absence. You must plan your conference attendance/personal absence with the professor for whom you are the TA prior to your absence and travel.

GTA Evaluation

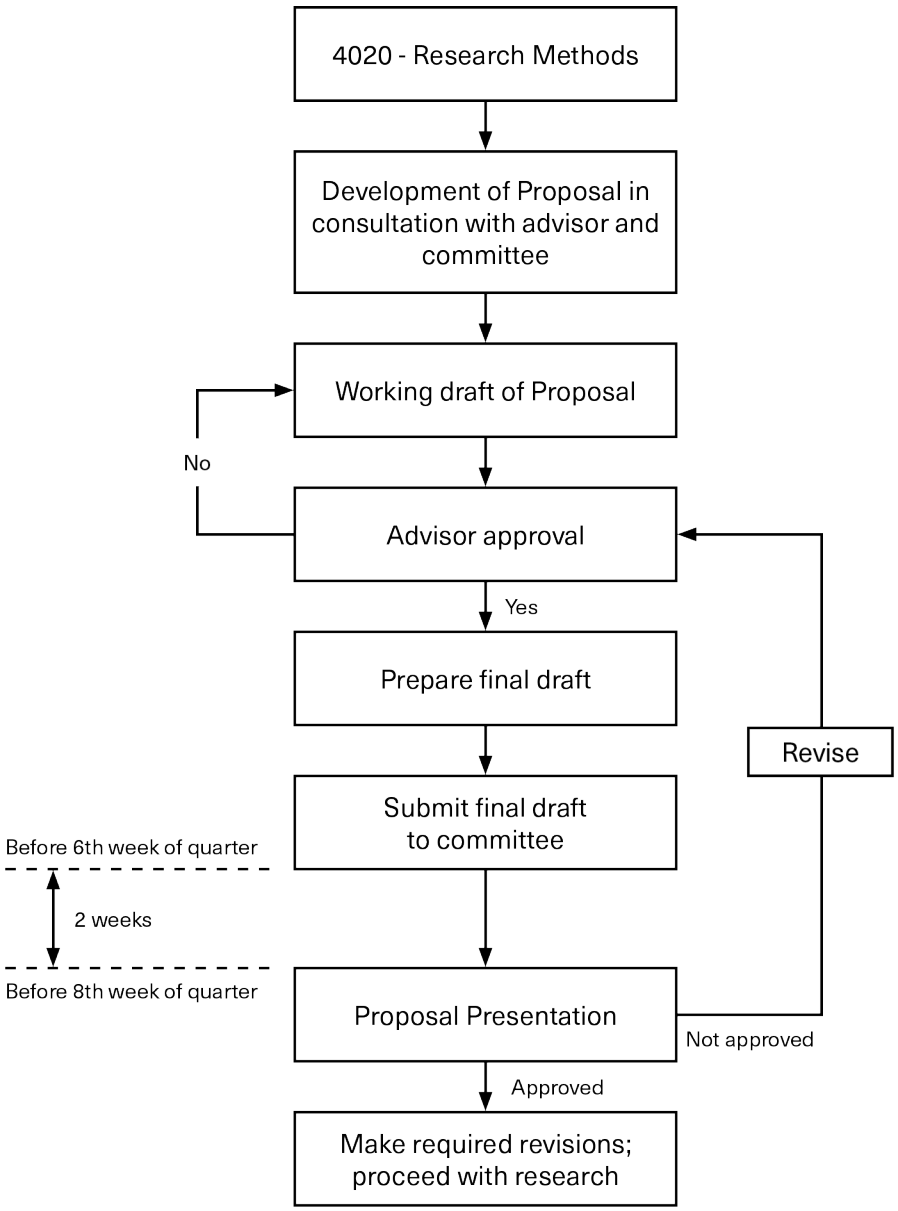
GTA performance is measured in two ways – a standardized student evaluation form, filled out by the students at the end of each quarter (this only applies to GTAs with lab instructor roles or direct student instructional responsibilities), and an instructor evaluation (departmental review), completed by the faculty in charge of the course. Both are considered important in gauging your teaching competence, and the renewal of your funding is dependent in part on meeting or exceeding minimum standards as established by the department. GTAs must obtain a 'satisfactory' or 'excellent' evaluation from the course instructor. Each quarter course instructors will fill out an Instructor Evaluation of Teaching Assistants form with the following questions:

1. Briefly summarize the TA duties in this course. Overall evaluation of TA performance (Excellent, Satisfactory, Unsatisfactory)
2. Sometimes TAs are **truly exceptional**, going above and beyond the standard expectations. If this is the case here, please explain.
3. If you marked **unsatisfactory** above, please explain.
4. If you have any other comments regarding TA performance, please write them here.
5. Please share any constructive feedback on the TA performance this quarter, if any. This can be both praise and suggested improvements. These comments are intended to be shared with the TA for their benefit and growth.

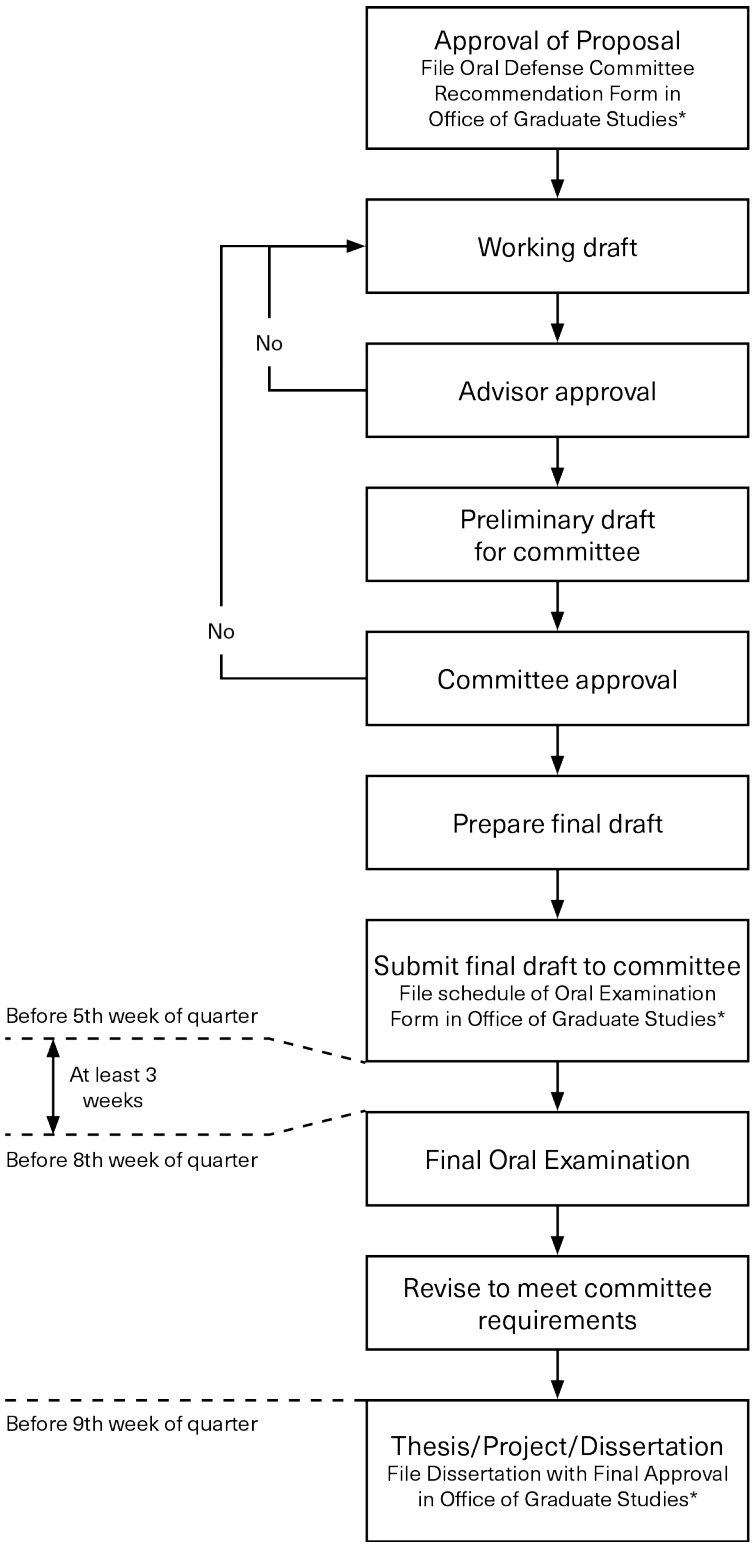
Guidelines for Graduate Research Assistants (GRAs)

Occasionally Graduate Research Assistantship (GRA) positions are available in the Department of Geography and the Environment. These are normally coordinated through individual faculty members. Guidelines for GRA positions can be found in the University of Denver Graduate Bulletin http://bulletin.du.edu

Flow Chart for Proposals



Flow Chart for Theses, Projects, and Dissertations



Specifications

Approved by advisor and committee.
* Copy of Oral Defense Committee form to department.

Complete form of text figures in clear manuscript form.

Dissertation in final typed form, figures in camera-ready form.
* Copy of Oral Examination form to department.

* Copy of Final Approval form to department (*Thesis/Project/Dissertations are not filed with this office*).

GEOGRAPHY & THE ENVIRONMENT

FALL 2022

Schedule of Classes

CRN #	Subj Code	Course Number	Sec	Credit Hours	Title	Max. Enroll	Sched Type	Begin Time	End Time	Meeting Days	Instructor	Room / Type
					Field Quarter: all students must register for the entire 4 course block: GEOG 2750, GEOG 3930, GEOL 2400, ENVI 2660							
2872	GEOG	2750	1	3	**Paleoenvironmental Field Methods** COREQ:GEOG 3930, GEOL 2400, ENVI 2660 -Depart Approval	12	Travel	16:00	18:00	MW	Sullivan	BW 123
4987	GEOG	3330	1	4	**Cultural Geography Seminar** COREQ: GEOG 2750, GEOL 2400, ENVI 2660 -Depart Approval	12	Study Abroad	16:00	18:00	MW	Taylor	BW 125
2877	GEOL	2400	1	4	**Geology and Ecology of the SW** COREQ: GEOG 2750, GEEOG 3930, ENVI 2660 -Depart Approval	12	Travel	12:00	16:00	F	Kerwin	Olin 142
2874	ENVI	2660	1	5	**Envi Hist Sonora & Baja Mexico** COREQ: GEOG 2750, GEOG 3930, GEOL 2400 -Depart Approval Required	12	Study Abroad	16:00	17:50	TR	Sullivan	BW 123
2030	GEOG	2020	1	4	Computer Cartography	24	L	10:00	11:30	TR	Hick	BW 126
					Lab		B	11:30	1:30	R	Hick	BW 126
2333	GEOG	2100	1	4	Intro GIS	24	L	10:00	11:30	MW	Kuzera	BW 126
					Lab		B	11:30	13:30	W	Kuzera	BW 126
3559	GEOG	2401	1	4	The Human Population	24	L	14:00	15:50	T	Sutton	BW 254
					Lab		B	14:00	15:50	R	Sutton	BW 126
5162	GEOG	2410	1	4	Economic Geography	24	L	12:00	13:50	TR	Tierney	Olin 142
3560	GEOG	2430	1	4	World Cities	24	ONL	ONL	ONL	ONL	Balsas	ONLINE
2088	GEOG	2500	1	4	**Sustainability and Human Society** -prereq: must be GEOG or ENVI major or SUST minor	24	L	10:00	11:50	MW	Nyantakyi-Frimpong	BW 124
4986	GEOG	2701	1	4	Topics: Integrated Water Mgmt	16	L	14:00	15:50	TR	McCarroll	Olin 142
3561	GEOG	2990	1	0	Prof Devlopmmt Geog & Envi Sci	15	ONL				Sutton	ONLINE
2211	GEOG	3010	1	4	**Geographic Information Analysis** -MSGIS online students only	15	ONL	ONL	ONL	ONL	Staff	ONLINE
2873	GEOG	3100	1	4	Geospatial Data	12	L/B	18:00	19:50	MW	Li	BW 125
3430	GEOG	4110	1	4	Geospatial Data	8	L/B	18:00	19:50	MW	Li	BW 125
1670	GEOG	3140	1	4	**GIS Database Design** -prereq: successful completion of an entry-level GIS course	16	L/B	12:00	13:50	MW	Zhang	BW 125
1920	GEOG	3150	1	4	**GIS Project Management** -MSGIS online students only	15	ONL	ONL	ONL	ONL	Hicks	ONLINE
3563	GEOG	3190	1	4	LiDAR: Theory and Applications	16	L	12:00	13:50	TR	Powell	BW 125
2089	GEOG	3200	1	4	Remote Sensing	24	L	14:00	15:50	MW	Powell	BW 126
					Lab		B	11:00	11:50	F	Powell	BW 126
2212	GEOG	3340	1	4	Geographies of Migration	20	L	12:00	13:50	MW	Moran-Taylor	BW 124
4128	GEOG	3350	1	4	Qualitative Methods in Geography	10	L	14:00	15:50	MW	Nyantakyi-Frimpong	BW 124
2213	GEOG	3400	1	4	Urban Landscapes	18	L	12:00	13:50	TR	Goetz	BW 124
2400	GEOG	4400	1	4	Urban Landscapes	6	L	12:00	13:50	TR	Goetz	BW 124
3562	GEOG	3520	1	4	Geography of Soils	18	L	12:00	15:50	W	Daniels	OLIN 142
5159	GEOG	3750	1	4	only	8	L	12:00	13:50	MW	Haze / Sutton	BW 123
1266	GEOG	4000	1	4	Fundamental Geographic Perspectives	15	L	12:00	15:50	F	Daniels	BW 123

1921	GEOG	4020	1	4	**Geographic Research Design** -MSGIS online students	15	ONL	ONL	ONL	ONL	Staff	ONLINE
1267	GEOG	4900	1	1	Graduate Colloquium	50	L	16:00	18:00	R	Nyantakyi-Frimpong	BAUD 101
2214	GEOG	4993	2	4	**Capstone or Project** -MSGIS online students only	15	ONL	ONL	ONL	ONL	Hick	ONLINE
	GEOG	3991		ARR	Independent Study-Undergraduate			ARR		ARR	ARR	
	GEOG	3999		ARR	Geographic Internship-Undergraduate			ARR		ARR	ARR	
	GEOG	4040		ARR	Research Identification			ARR		ARR	ARR	
	GEOG	4991		ARR	Independent Study			ARR		ARR	ARR	
	GEOG	4993		ARR	Capstone or Project			ARR		ARR	ARR	
	GEOG	4995		ARR	Independent Research			ARR		ARR	ARR	
	GEOG	4999		ARR	Geographic Internship-Graduate			ARR		ARR	ARR	
	GEOG	5991		ARR	Independent Study - PhD			ARR		ARR	ARR	
	GEOG	5995		ARR	Independent Research			ARR		ARR	ARR	
	GEOL	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3995		ARR	Undergraduate Research			ARR		ARR	ARR	
3558	**ENVI**	**3000**	**1**	**4**	**Environmental Law**	**24**	**L**	**16:00**	**17:50**	**TR**	**Ganz**	Olin 142
5040	FSEM	1111		4	First Year Seminar	19	L	10:00	11:50	TR	Sutton	SAB 118
5038	FSEM	1111		4	First Year Seminar	19	L	14:00	15:50	MW	Hamann	Sturm 233
5041	FSEM	1111		4	First Year Seminar	19	L	10:00	13:50	F	Trigoso	Sturm 476
5039	FSEM	1111		4	First Year Seminar	19	L	10:00	11:50	TR	Hazen	MRH 203
1721	GEOG	1201	1	4	Env. Systems - Weather	75	L	9:00	9:50	MWF	Keables	BAUD 101
1722			2		Lab	20	B	14:00	15:50	M	Staff	BW 16
1723			3		Lab	20	B	8:00	9:50	T	Staff	BW 16
1724			4		Lab	20	B	14:00	15:50	W	Staff	BW 16
1725			5		Lab	20	B	8:00	9:50	R	Staff	BW 16
1726	GEOG	1201	6	4	Env. Systems - Weather	70	L	10:00	10:50	MWF	Hamann	BAUD 101
1727			7		Lab	20	B	16:00	17:50	M	Staff	BW 16
1728			8		Lab	20	B	10:00	11:50	T	Staff	BW 16
1729			9		Lab	20	B	16:00	17:50	W	Staff	BW 16
1730			10		Lab	20	B	10:00	11:50	R	Staff	BW 16
1731	GEOG	1216	1	4	Our Dynamic Earth I	80	L	2:00	3:30	MW	Kuzera	BAUD 101
1732			2		Lab	20	B	16:00	17:50	M	Staff	Olin 142
1733			3		Lab	20	B	8:00	9:50	T	Staff	Olin 142
1734			4		Lab	20	B	16:00	17:50	W	Staff	Olin 142
1735			5		Lab	20	B	8:00	9:50	R	Staff	BW 124
2055	GEOG	1216	6	4	Our Dynamic Earth I	80	L	2:00	3:30	TR	Hazen	BAUD 101
2056			7		Lab	20	B	16:00	17:50	T	Staff	BW 124
2057			8		Lab	20	B	8:00	9:50	W	Staff	Olin 142
2058			9		Lab	20	B	8:00	9:50	R	Staff	Olin 142
2059			10		Lab	20	B	8:00	9:50	F	Staff	Olin 142
4175	GEOG	1216	11	4	Our Dynamic Earth I	80	L	12:00	13:30	MW	Kuzera	STURM 151
4176			12		Lab	20	B	8:00	9:50	W	Staff	BW 124
4177			13		Lab	20	B	16:00	17:50	W	Staff	BW 124
4178			14		Lab	20	B	8:00	9:50	F	Staff	BW 124
4179			15		Lab	20	B	10:00	11:50	F	Staff	Olin 142
1736	GEOG	1264	1	4	Global Environmental Change: Climate Dynamics	30	L	12:00	13:50	MW	Trigoso	BAUD 102
1737			2		Lab	15	B	12:00	13:50	T	Staff	BW 16
1738			3		Lab	15	B	14:00	15:50	T	Staff	BW 16
1766	GEOG	1410	1	4	People, Places & Landscapes	64	L	10:00	11:50	MW	Tierney	STURM 134
2009	GEOG	1410	2	4	People, Places & Landscapes	64	L	10:00	11:50	TR	Boschmann	BAUD 101

GEOGRAPHY AND THE ENVIRONMENT

WINTER 2023

Schedule of Classes

CRN #	Subj Code	Course Numbe	Sec	Credit Hours	Title	Max. Enroll	Sched Type	Begin Time	End Time	Meeting Days	Instructor	Room/ Type
	GEOG	2000	1	4	Geographic Statistics	20	L	14:00	15:30	MW	Zhang	
					Lab	20	B	12:00	13:50	F	Zhang	
					Must be junior or senior status							
	GEOG	2020	1	4	Computer Cartography	24	L	14:00	15:30	TR	Keables	
					Lab	24	B	15:30	17:30	T	Keables	
					Must be sophmore, junior or senior status							
	GEOG	2100	1	4	Intro to GIS	24	L	10:00	11:30	TR	Hick	
					Lab	24	B	11:30	13:30	R	Hick	
	GEOG	2500	1	4	Sustainability and Human Society	24	L	10:00	11:50	TR	Tierney	
					Must be sustainability minor, geography or environmental science major							
	GEOG	2550	1	4	Issues in Sustainability	20	L	ONL	ONL	ONL	Henry	
					Must have junior or senior status; GEOG 2500							
	GEOG	2700	1	4	Contemporary Environmental Issues	20	L	12:00	13:50	MW	Kerwin	
	GEOG	3000	1	4	Advanced Geog Statistics	12	L	12:00	1:50	MW	Kuzera	
					Pre-req: GEOG 2000 or consent instructor							
	GEOG	3000	1	4	Advanced Geog Statistics	20	O/D	ONL	ONL	ONL	Kuzera	
					MSGIS online students only							
	GEOG	3130	1	4	GIS Programming with Python	16	L	12:00	13:30	TR	Li	
						16	B	12:00	13:50	F		
	GEOG	3140	1	4	GIS Database Design	20	O/D	ONL	ONL	ONL	Kreeger	
					MSGIS online students only							
	GEOG	3150	1	4	Project Management	15	O/D	ONL	ONL	ONL	Hick	
					MSGIS online students only							
	GEOG	3200	1	4	Remote Sensing	24	L	10:00	11:50	MW	Powell	
					Lab		B	10:00	10:50	F	Powell	
	GEOG	3230	1	4	Advanced Remote Sensing	16	L	14:00	15:50	TR	Powell	
					Pre-req: GEOG 3200 or consent insturctor							
	GEOG	3425	1	4	Urban Sustainability	18	L	12:00	13:50	MW	Boschmann	
	GEOG	3425	1	4	Urban Sustainability	18	L	12:00	13:50	MW	Boschmann	
	GEOG	3640	1	4	Climage Change and Society	24	L	14:00	15:50	TR	Trigoso	
	GEOG	3775	1	4	Geography of Health	24	L	10:00	11:50	TR	Hazen	
	GEOG	3870	1	4	Water Resources and Sustainability	15	L	14:00	15:50	MW	Hamann	
	GEOG	4040	1	ARR	Research Topic Identification			ARR		ARR	ARR	

	GEOG	4425	1	4	Urban Sustainability	6	L	12:00	13:50	MW	Boschmann	
	GEOG	4900	1	0	Graduate Colloquium	50	L	16:00	17:50	R	Nyantakyi-Frimpong	
	GEOG	3991		ARR	Independent Study-Undergraduate			ARR		ARR	ARR	
	GEOG	3999		ARR	Geographic Internship-Undergraduate			ARR		ARR	ARR	
	GEOG	4950		ARR	Advanced Field Research			ARR		ARR	ARR	
	GEOG	4991		ARR	Independent Study - Graduate			ARR		ARR	ARR	
	GEOG	4992		ARR	Directed Study - Graduate			ARR		ARR	ARR	
	GEOG	4995		ARR	Independent Research			ARR		ARR	ARR	
	GEOG	4999		ARR	Geographic Internship-Graduate			ARR		ARR	ARR	
	GEOG	5991		ARR	Independent Study - PhD			ARR		ARR	ARR	
	GEOG	5995		ARR	Independent Research			ARR		ARR	ARR	
	GEOL	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3995		ARR	Undergraduate Research			ARR		ARR	ARR	
	GEOG	1202	1	4	Env. Systems - Hydrology	80	L	9:00	9:50	MWF	Kerwin	
			2		Lab	20	B	14:00	15:50	M	Staff	
			3		Lab	20	B	8:00	9:50	T	Staff	
			4		Lab	20	B	14:00	15:50	W	Staff	
			5		Lab	20	B	8:00	9:50	R	Staff	
	GEOG	1202	6	4	Env. Systems - Hydrology	80	L	10:00	10:50	MWF	Hamann	
			7		Lab	20	B	16:00	17:50	M	Staff	
			8		Lab	20	B	10:00	11:50	T	Staff	
			9		Lab	20	B	16:00	17:50	W	Staff	
			10		Lab	20	B	10:00	11:50	R	Staff	
	GEOG	1217	1	4	Our Dynamic Earth I	80	L	2:00	3:30	MW	Kuzera	
			2		Lab	20	B	16:00	17:50	M	Staff	
			3		Lab	20	B	8:00	9:50	T	Staff	
			4		Lab	20	B	16:00	17:50	W	Staff	
			5		Lab	20	B	8:00	9:50	R	Staff	
	GEOG	1217	6	4	Our Dynamic Earth I	80	L	2:00	3:30	TR	Hazen	
			7		Lab	20	B	16:00	17:50	T	Staff	
			8		Lab	20	B	8:00	9:50	W	Staff	
			9		Lab	20	B	8:00	9:50	R	Staff	
			10		Lab	20	B	8:00	9:50	F	Staff	
	GEOG	1217	11	4	Our Dynamic Earth II	80	L	12:00	13:30	TR	Hazen	
			12		Lab	20	B	8:00	9:50	W	Staff	
			13		Lab	20	B	14:00	15:50	W	Staff	
			14		Lab	20	B	8:00	9:50	F	Staff	
			15		Lab	20	B	10:00	11:50	F	Staff	
	GEOG	1265	1	4	Global Environmental Change II: Terrestrial Environments	30	L	12:00	13:30	MW	Sullivan	

GEOGRAPHY & THE ENVIRONMENT

SPRING 2023

(Tentative & Subject to Change)

Schedule of Classes

CRN #	Subj Code	Course Numbe	Sec	Credit Hours	Title	Max. Enroll	Sched Type	Begin Time	End Time	Meeting Days	Instructor	Room / Type
	GEOG	2000	1		Geographic Statistics	24	L	10:00	11:30	MW	Tierney	
					Lab	24	B	10:00	11:50	F	Staff	
	Must be junior or senior status											
	GEOG	2100	1	4	Intro to GIS	24	L	10:00	11:30	TR	Zhang	
					Lab	24	B	11:30	1:30	R	Zhang	
	GEOG	2410	1	4	Economic Geography	23	L	10:00	11:50	MW	Tierney	
	GEOG	2500	1	4	Sustainability and Human Society	22	L	10:00	11:50	MW	Tierney	
	Must be sustainability minor, geography or environmental science major											
	GEOG	2511	1	4	Principles of Sustainability	22	L	14:00	15:50	TR	Trigoso	
	Honors Program											
	GEOG	2550	1	4	Current Issues in Sustainability	24	L	10:00	11:50	MW	Nyantakyi-Frimpong	
	Must have junior or senior status; GEOG 2500											
	GEOG	2810	1	4	Geography of Latin America	18	L	TBD			Taylor	
	GEOG	2990	1	0	Prof Dev Geog & Env Sci	40	S				Keables	
	Required for graduating seniors											
	GEOG	3010	1	4	Geographic Information Analysis	24	L	14:00	15:50	TR	Li	
	Pre-req: completion of at least one GIS course											
	GEOG	3010	2	4	Geographic Information Analysis	15		ONL	ONL	ONL	Hick	
	MSGIS online students only											
	GEOG	3120	1	4	Environmental/GIS Modeling	16	L	14:00	15:50	TR	Zhang	
	GEOG 2000 & GEOG 2100 or instructor consent											
	GEOG	3170	1	4	Geospatial Analysis Project	12	L	16:00	17:50	MW	Powell	
	GEOG	3200	1	4	Remote Sensing	24	L	14:00	15:50	MW	Sutton	
					Lab		B	12:00	12:50	F		
	GEOG	3310	1	4	Cult/Nature/Econ-Human Ecology	20	L	12:00	13:50	MW	Moran-Taylor	
	GEOG	3610	1	4	Climatology	24	L	12:00	13:50	MW	Keables	
	GEOG 1201 or permission of instructor											
	GEOG	3630	1	4	Dendroclimatology	12	I	14:00	17:50	T	Kerwin	
	GEOG	3800	1	4	Geography of Colorado	24	L	12:00	13:50	TR	Sullivan	
	GEOG	3825	1	4	Geographies Intl Dev Africa	24	L	12:00	13:50	TR	Nyantakyi-Frimpong	
	GEOG	3930	1	4	Cultural Geography Seminar: Space and P	24	I	12:00	15:50	W	Taylor	
	GEOG	4020	1	4	Geographic Research Methodology	10	L	12:00	15:50	F	Taylor	
	GEOG	4020	1	4	Geographic Research Design	15			ONL	ONL	Staff	
	MSGIS online students only											

	GEOG	4170	1	4	Geospatial Analysis & Project Mgmt	6	L	16:00	17:50	MW	Powell	
	GEOG	4810	1	4	Geography of Latin America	6	L	TBD			Taylor	
	GEOG	4900	1	1	Graduate Colloquium	50	L	16:00	18:00	R	Nyantakyi-Frimpong	
	GEOG	4993	2	4	**Capstone or Project** -MSGIS online	15	ONL	ONL	ONL	ONL	Hick	
	GEOG	3991		ARR	Independent Study-Undergraduate			ARR		ARR	ARR	
	GEOG	3999		ARR	Geographic Internship-Undergraduate			ARR		ARR	ARR	
	GEOG	4991		ARR	Independent Study			ARR		ARR	ARR	
	GEOG	4993		ARR	Capstone or Project			ARR		ARR	ARR	
	GEOG	4995		ARR	Independent Research			ARR		ARR	ARR	
	GEOG	4999		ARR	Geographic Internship-Graduate			ARR		ARR	ARR	
	GEOG	5991		ARR	Independent Study - PhD			ARR		ARR	ARR	
	GEOG	5995		ARR	Independent Research			ARR		ARR	ARR	
	GEOL	**3100**	**1**	**4**	**Environmental Geology** (GEOG 1202 or	15	B	14:00	15:50	R	Kerwin	
					Lab		B	14:00	16:50	T		
	GEOL	**3540**	**1**	**4**	**Hydrology** (GEOG 1202 or instructor perm	15	L	14:00	16:50	W	Hamann	
					Lab		B	14:00	15:50	M		
	GEOL	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3991		ARR	Independent Study			ARR		ARR	ARR	
	ENVI	3995		ARR	Undergraduate Research			ARR		ARR	ARR	
	ENVI	**3000**	**1**	**4**	**Environmental Law**	**23**	**L**	**16:00**	**17:50**	**TR**	**Ganz**	
	GEOG	1203	1		Env. Systems - Landforms	80	L	9:00	9:50	MWF	Sullivan	
			2		Lab	24	B	14:00	15:50	M	Staff	
			3		Lab	24	B	8:00	9:50	T	Staff	
			4		Lab	24	B	14:00	15:50	W	Staff	
			5		Lab	24	B	8:00	9:50	R	Staff	
	GEOG	1203	6	4	Env. Systems - Landforms	80	L	10:00	10:50	MWF	Hamann	
			7		Lab	24	B	16:00	17:50	M	Staff	
			8		Lab	24	B	10:00	11:50	T	Staff	
			9		Lab	24	B	16:00	17:50	W	Staff	
			10		Lab	24	B	10:00	11:50	R	Staff	
	GEOG	1218	1	4	Our Dynamic Earth III	80	L	2:00	3:30	MW	Kuzera	
			2		Lab	20	B	16:00	17:50	M	Staff	
			3		Lab	20	B	8:00	9:50	T	Staff	
			4		Lab	20	B	16:00	17:50	W	Staff	
			5		Lab	20	B	8:00	9:50	R	Staff	
	GEOG	1218	6	4	Our Dynamic Earth III	80	L	2:00	3:30	TR	Hazen	
			7		Lab	20	B	16:00	17:50	T	Staff	
			8		Lab	20	B	8:00	9:50	W	Staff	
			9		Lab	20	B	8:00	9:50	R	Staff	
			10		Lab	20	B	8:00	9:50	F	Staff	
	GEOG	1218	11	4	Our Dynamic Earth III	80	L	12:00	13:30	MW	Kuzera	
			12		Lab	20	B	8:00	9:50	W	Staff	
			13		Lab	20	B	16:00	17:50	W	Staff	
			14		Lab	20	B	8:00	9:50	F	Staff	
			15		Lab	20	B	10:00	11:50	F	Staff	

	GEOG	1266	1	4	Global Environmental Change III: Terrestria	30	L				Daniels	
	Honors Program											
			2		Lab	15	B			T	Staff	
			3		Lab	15	B			T	Staff	
	GEOG	1410	1	4	People, Places & Landscapes	64	L	10:00	11:50	TR	Hazen	
	GEOG	1410	2	4	People, Places & Landscapes	64	L	10:00	11:50	MW	Trigoso	