GEOG 5091 Applied GIS
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Applications of advanced GIS design and modeling to a specific topical and/or geographic area. Topics and studies will be varied over time.
Prerequisite(s): GEOG 3440 and GEOG 4542 and GEOG 5540. Cross Listing(s): GEOG 5091G.

GEOG 5091G Applied GIS
4 Credit Hours. 4 Lecture Hours. 0 Lab Hours.
Applications of advanced GIS design and modeling to a specific topical and/or geographic area. Topics and studies will be varied over time. Graduate students can expect more comprehensive and rigorous course assessments (e.g. class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5091.

GEOG 5130G Geography of North America
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Systematic regional treatment of Canada and the United States including the physical, cultural, and economic aspects of various sub regions. Special attention will be paid to comparative themes such as resource development, trade, and migration. Cross Listing(s): GEOG 5130G.

GEOG 5130G Geography of North America
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Systematic regional treatment of Canada and the United States including the physical, cultural, and economic aspects of various subregions. Special attention will be paid to comparative themes such as resource development, trade, and migration. Graduate students will complete an individual term project or special report. Cross Listing(s): GEOG 5130.

GEOG 5230 Urban Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An analysis of site, situation, base, principal functions, distribution, supporting areas and internal structure of urban settlements.
Prerequisite(s): GEOG 1101 or GEOG 1130.
Cross Listing(s): GEOG 5230G.

GEOG 5230G Urban Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An analysis of site, situation, base, principal functions, distribution, supporting areas and internal structure of urban settlements. Graduate students will complete an individual term project or special report.
Prerequisite(s): GEOG 1101 or GEOG 1130.
Cross Listing(s): GEOG 5230.

GEOG 5231 Economic Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Study of the distribution, production and utilization of the world’s basic commodities.
Prerequisite(s): GEOG 1101 or GEOG 1130.
Cross Listing(s): GEOG 5231G.

GEOG 5231G Economic Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Study of the distribution, production and utilization of the world’s basic commodities. Graduate students can expect more comprehensive and rigorous course assessments (e.g. class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5231.

GEOG 5330 Population Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course explores issues and themes related to the patterns, processes, and consequences of the spatial distribution of the world’s population. The course is organized around the fundamental components of population change, fertility, mortality, and migration. Current events related to population change and distribution in multiple geographical contexts will constitute a primary focus of the course.
Prerequisite(s): GEOG 1101 or GEOG 1130. Cross Listing(s): GEOG 5330G.

GEOG 5330G Population Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course explores issues and themes related to the patterns, processes, and consequences of the spatial distribution of the world’s population. The course is organized around the fundamental components of population change, fertility, mortality, and migration. Current events related to population change and distribution in multiple geographical contexts will constitute a primary focus of the course. Graduate students will be required to complete more detailed, sophisticated assignments and complete longer, more in depth term papers.
Prerequisite(s): GEOG 1101 or GEOG 1130. Cross Listing(s): GEOG 5330.

GEOG 5430 Political Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will cover the geography of political behavior from the local to the global scale by examining the relationship of geography and politics. Students will investigate the rapidly changing geopolitics of the era in which they live, with special emphasis on international relations, sovereignty, war, and terrorism. Additionally, the course will focus on redistricting, the Electoral College, and other geographic elements of our American democratic system.
Prerequisite(s): GEOG 1101 or GEOG 1130. Cross Listing(s): GEOG 5430G.

GEOG 5430G Political Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will cover the geography of political behavior from the local to the global scale by examining the relationship of geography and politics. Students will investigate the rapidly changing geopolitics of the era in which they live, with special emphasis on international relations, sovereignty, war, and terrorism. Additionally, the course will focus on redistricting, the Electoral College, and other geographic elements of our American democratic system. Graduate students will learn how to undertake an independent, supervised research project in the field of political geography.
Prerequisite(s): GEOG 1101 or GEOG 1130. Cross Listing(s): GEOG 5430.

GEOG 5435 Nature and Society
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will examine factors that affect humans’ perspectives on resources and analyze the availability, scarcity, and valuing of natural resources, in addition to conflicts over their use.
Cross Listing(s): GEOG 5435G.

GEOG 5435G Nature and Society
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will examine factors that affect humans’ perspectives on resources and analyze the availability, scarcity, and valuing of natural resources, in addition to conflicts over their use. Graduate students can expect more comprehensive and rigorous course assessments (e.g. class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5435.

GEOG 5441 Remote Sensing
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This course is designed to introduce the principles and applications of remote sensing and imagery, including electromagnetic energy, the interaction between energy and earth’s surface, remotely sensed data, and the major sensor systems.
Cross Listing(s): GEOG 5441G.
GEOG 5441G Remote Sensing
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This course is designed to introduce the principles and applications of remote sensing and imagery, including electromagnetic energy, the interaction between energy and Earth's surface, remotely sensed data, and the major sensor systems. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5441.
GEOG 5530 Cultural Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An examination of the world's diverse cultural landscapes. Emphasis on the connections between social, political, religious, and agricultural patterns and the impact of societies on the natural environment.
Prerequisite(s): GEOG 1130 or GEOG 1101.
Cross Listing(s): GEOG 5530G, GEOG 3530.
GEOG 5530G Cultural Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An examination of the world's diverse cultural landscapes. Emphasis on the connections between social, political, religious, and agricultural patterns and the impact of societies on the natural environment. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5530.
GEOG 5531 Environmental Impact and Remediation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will introduce students to the National Environmental Policy Act (NEPA), its Environmental Impact Assessment (EIA) process per the Council on Environmental Quality (CEQ), and review criteria regarding whether a Finding Of No Significant Impact (FONSI) or requirement for an Environmental Impact Statement (EIS) is issued. Students will see how the EIA process can be applied to the workflow of federal projects, from the research phase through planning, remediation, monitoring, evaluation, and improved regulatory enforcement/environmental policy.
Prerequisite(s): GEOG 1111.
Cross Listing(s): GEOG 5531G.
GEOG 5531G Environmental Impact and Remediation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course will introduce students to the National Environmental Policy Act (NEPA), its Environmental Impact Assessment (EIA) process per the Council on Environmental Quality (CEQ), and review criteria regarding whether a Finding Of No Significant Impact (FONSI) or requirement for an Environmental Impact Statement (EIS) is issued. Students will see how the EIA process can be applied to the workflow of federal projects, from the research phase through planning, remediation, monitoring, evaluation, and improved regulatory enforcement/environmental policy. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5531.
GEOG 5532 Tourism Geographies
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A critical/cultural analysis of the influence of tourism on communities and landscapes, focusing on its economic, social, and environmental impacts through case studies.
Prerequisite(s): GEOG 1101 or GEOG 1130 or permission of instructor.
Cross Listing(s): GEOG 5532G.
GEOG 5532G Tourism Geographies
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A critical/cultural analysis of the influence of tourism on communities and landscapes, focusing on its economic, social, and environmental impacts through case studies. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5532.
GEOG 5535 Biogeography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Introduces students to biogeography: the study of the distribution of plants and animals. Both historical taxonomic and ecosystems biogeography are covered. The analysis and explanation of spatial patterns of plant and animal distribution, while addressing change in species distribution and evolution in response to climate change and the process of continental drift that have taken place in the past and are taking place today, will be emphasized.
Prerequisite(s): GEOG 1111 or BIOL 1230 or BIOL 1331 or BIOL 1335 or GEOL 1430.
GEOG 5535G Biogeography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Introduces students to biogeography: the study of the distribution of plants and animals. Both historical taxonomic and ecosystems biogeography are covered. The analysis and explanation of spatial patterns of plant and animal distribution, while addressing change in species distribution and evolution in response to climate change and the process of continental drift that have taken place in the past and are taking place today, will be emphasized. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5535.
GEOG 5540 Advanced GIS
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This course covers the advanced spatial analysis and modeling functions of GIS and offers both fundamental theoretical background and extensive hands-on experience in spatial analysis and modeling. Major topics include network analysis, surface modeling, spatial patterns analysis, spatial data visualization, and basics of spatial statistics.
Prerequisite(s): GEOG 3440 and GEOG 4542.
Cross Listing(s): GEOG 5540G.
GEOG 5540G Advanced GIS
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This course covers the advanced spatial analysis and modeling functions of GIS and offers both fundamental theoretical background and extensive hands-on experience in spatial analysis and modeling. Major topics include network analysis, surface modeling, spatial patterns analysis, spatial data visualization, and basics of spatial statistics. Graduate students can expect more comprehensive and rigorous course assessments (e.g., class discussion, exams, and/or term papers/projects).
Cross Listing(s): GEOG 5540.
GEOG 5545 Ecohydrology
4 Credit Hours. 3 Lecture Hours. 3 Lab Hours.
This course will cover how water interacts to connect the biotic and abiotic components of ecosystems, with a focus on forests. Students will measure hydrologic processes to determine the water budget of an on-campus forest and associate these measurements to ecological processes upon which human society relies (watershed management and sustainable agriculture). This includes training on common and cutting-edge ecohydrological field equipment installation, operation, maintenance, and data analysis techniques. Additionally, students will compare their results to studies around the globe.
Prerequisite(s): GEOG 1111.
Cross Listing(s): GEOG 5545G.
GEOG 5545G Ecohydrology
4 Credit Hours. 3 Lecture Hours. 3 Lab Hours.
This course will cover how water interacts to connect the biotic and abiotic components of ecosystems, with a focus on forests. Students will measure hydrologic processes to determine the water budget of an on-campus forest and associate these measurements to ecological processes upon which human society relies (watershed management and sustainable agriculture). This includes training on common and cutting-edge ecohydrological field equipment installation, operation, maintenance, and data analysis techniques. Additionally, students will compare their results to studies around the globe. Graduate students will write an ecohydrology research proposal in a format required by federal funding agencies.
Cross Listing(s): GEOG 5545.

GEOG 5550G Topics in Regional Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A survey of the physical, cultural, historical, and economic geography of world region. May be repeated as topics vary.

GEOG 5590 Field Studies in Geography
3-8 Credit Hours. 3-8 Lecture Hours. 0 Lab Hours.
An intensive course on a specific region of the world conducted in that region combining lecture, observation and travel. Students usually will bear tuition, travel and living expenses during the course. May be repeated for credit in different regions.
Cross Listing(s): GEOG 5590G.

GEOG 5590G Field Studies-Geography
6-8 Credit Hours. 6-8 Lecture Hours. 0 Lab Hours.
An intensive course on a specific region of the world conducted in that region combining lecture, observation and travel. Students usually will bear tuition, travel and living expenses during the course. May be repeated for credit in different regions. Graduate students will complete an individual term project or special report. Cross Listing(s): GEOG 5590.

GEOG 5890 Directed Study
1-4 Credit Hours. 1-4 Lecture Hours. 0 Lab Hours.
Independent study for advanced students.
Prerequisite(s): Approval of Department Chair is required. Cross Listing(s): GEOG 5890G.

GEOG 5890G Directed Study
4 Credit Hours. 1-4 Lecture Hours. 1-4 Lab Hours.
Independent study for advanced students. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do.
Prerequisite(s): Approval of Department Chair is required. Cross Listing(s): GEOG 5890.

GEOG 7531 Global Climate Change
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course investigates the global climate system in the context of current and future changes in this system. In particular the course provides an in depth study of hemispheric and smaller scale changes in the climate system with emphasis on temperature, precipitation, and severe weather.

GEOG 7535 Cultural and Political Ecology
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course examines the subfields of cultural and political ecology through an extensive review and critique of the research literature in areas including: the appropriation of nature, conservation, ecotourism, sustainability, deforestation, and environmental policies. Examples from multiple geographic contexts will be discussed and critiqued.

GEOG 7541 GIS Applications in Social Science
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This course is designed to introduce the concepts, theories, computational methods, and real-world applications of GIS in the social sciences-related fields at the graduate level. Prerequisite(s): A minimum grade of "C" in GEOG 7631.

GEOG 7542 Geospatial Techniques and Applications
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
Geospatial Techniques and Applications aims to broaden students’ advanced knowledge and skills in the use and applications of state-of-the-art geospatial technologies to a range of environmental issues and problems. The course will provide in-depth theoretical background on issues surrounding data acquisition, image processing, and analysis to prepare students for semester-long research projects.
Prerequisite(s): A minimum grade of "C" in GEOG 5441G.

GEOG 7543 Frontiers in Geospatial Science
4 Credit Hours. 2 Lecture Hours. 4 Lab Hours.
This class introduces students to recent developments in geospatial science and technologies. Students will become familiar with the most recent technological advances in Geographic Information Science.

GEOG 7630 Seminar in Geographic Thought
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This graduate seminar provides a comprehensive introduction to the discipline of Geography through an examination of the historical roots of the field, its fundamental theoretical traditions and concepts, and contemporary debates within the discipline.

GEOG 7631 Spatial Analysis
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course is designed to introduce the theory and applications of spatial statistical techniques in both geographic and environmental sciences.

GEOG 7632 Seminar in Geographic Research and Methods
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An analysis of research topics and methodologies in geography. Students will define a research topic, review literature in their field of interest, and work toward preparation of their capstone project or thesis research proposal.

GEOG 7830 Non-Thesis Capstone
3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
This course is reserved for students pursuing the MS in Applied Geography non-thesis option. Students will define, devise, and implement a Master’s Capstone project, which includes writing, presenting, and defending of the project. Students will present their capstone project in a public presentation open to the university community in partial fulfillment of the Master of Science degree in Applied Geography.

GEOG 7999 Thesis
1-6 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
This course is the culmination of the Master’s Thesis as it entails the final stage of the writing, presenting, and defending of the thesis project. Students will present their thesis to their thesis committee in a public presentation open to the university community in partial fulfillment of the Master of Science degree in Applied Geography. The final written thesis must be accepted by the thesis committee in accordance with the timeline laid out by the College of Graduate Studies.