GEOG Geography

GEOG 1100 World Regional Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Study of various regions of the world—natural, cultural, political, and economic with emphasis on fundamental geographic information.

GEOG 1101 Introduction to Human Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A survey of global patterns of resources, population, culture, and economic systems. Emphasis is placed upon the factors contributing to these patterns and the distinctions between the technologically advanced and less advanced regions of the world.

GEOG 1110 Climate and the Landscape Lab
1 Credit Hour. 0 Lecture Hours. 2 Lab Hours.
A series of laboratories and exercises designed to provide hands-on applications of general theories regarding earth processes discussed in GEOG 1111, Climate and the Landscape.

GEOG 1111 Physical Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The earth's surface in its areal differentiation. Focuses on the various elements of physical geography that act as a foundation to the discipline, including location and interaction of physical surficial phenomena.

GEOG 1130 World Regional Geography
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Study of geographic regions of the world emphasizing physical landscapes, resources, economies, culture and politics. Selected problems or situations of contemporary interest will be incorporated.

GEOG 3020 Introduction to Geology
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Introduction to physical geology. Study of common earth materials, dynamic processes of change, volcanology, seismology, plate tectonics, and the structure and evolution of the earth's crust and inner regions. Prerequisite(s): Completion of GEOG 1111.

GEOG 3330 Weather and Climate
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Elements and controls of weather and climate and the distribution and characteristics of climate regions. Prerequisite(s): GEOG 1111.

GEOG 3440 Introduction to GIS and Cartography
4 Credit Hours. 0.2 Lecture Hours. 0.4 Lab Hours.
An introduction to the basic concepts, theories, techniques, and applications of Geographic Information Systems (GIS) and cartography. Students will learn and apply GIS and cartographic concepts to gain extensive hands-on experience in thematic mapping and manipulation of geo-referenced spatial information using GIS software.

GEOG 4120 Introduction to Research
2 Credit Hours. 2 Lecture Hours. 0 Lab Hours.
The process of research utilizing the scientific method will be studied. Research methods in human and physical geography are discussed and critiqued. Methodologies including literature searches, topic selection and refinement, and research problem solving will be discussed. A proposal for a research project will be selected or assigned, a proposal written, and an oral presentation of the proposed research will be made. A minimum grade of "B" is required to continue in the research sequence. Prerequisite(s): Permission of instructor required.

GEOG 4131 Geography of the American South
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Systematic regional treatment of the South including the physical, cultural and economic aspects of its various regions.

GEOG 4232 Geography of Latin America
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Study of the physical, cultural and economic geography of Latin America, including Mexico. Cross Listing(s): LAST 4232.

GEOG 4233 Geography of Asia
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A survey of the physical, cultural, political and economic geography of the countries of Asia. Selected problems or situations of contemporary interest will be incorporated.

GEOG 4330 Geography of Africa South of the Sahara
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A survey of the physical, cultural, political and economic geography of Africa south of the Sahara Desert. Selected problems or situations of contemporary interest will be incorporated. Cross Listing(s): AAST 4330.

GEOG 4430 Geography of Europe
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Survey of the physical, cultural, political and economic geography of Europe. Situations of contemporary interest will be included.

GEOG 4542 Intermediate GIS
4 Credit Hours. 0.2 Lecture Hours. 0.4 Lab Hours.
An introduction to advanced data models and spatial data analysis functions of Geographic Information Systems (GIS) software, with an emphasis on the conversion among various GIS data formats and geodatabase construction and management. Prerequisite(s): GEOG 3440.

GEOG 4790 Internship in Geography
1-6 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
The internship allows students to work in a professional setting related to their chosen concentration in the field. Undergraduate students can earn between one and six credits for internships approved by their academic advisor and the Department's Internship Director. Students must maintain contact with the Internship Director through the course of the internship work, and must submit a written report and a work product at the end of the project. Internship credits can be used for elective credit only and may not substitute for specific degree requirements. Prerequisite(s): Permission of the Geology and Geography Internship Director is required.

GEOG 4830 Senior Thesis Research I
3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Students will complete a literature review and evaluation and conduct independent research as outlined in their research proposal formulated during Introduction to Research (GEOG 4120). Research is conducted under the direction of a faculty advisor and will lead to the completion of the senior thesis. Prerequisite(s): A minimum grade of "B" in GEOG 4120 and a minimum GPA of 3.0.

GEOG 4831 Senior Thesis Research II
3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
The process of scientific communication will be investigated and practiced through completion of a senior thesis project. This project includes both a written thesis and research presentation. Students will format a thesis manuscript suitable for publication in a professional journal and design and deliver an oral presentation suitable for a professional conference. Prerequisite(s): A minimum grade of "B" in GEOG 4830.

GEOG 5090 Selected Topics
1-9 Credit Hours. 0-9 Lecture Hours. 0-9 Lab Hours.
Offered with or without a lab on an experimental basis. Cross Listing(s): GEOG 5090G.
GEOG 5091 Applied GIS
4 Credit Hours. 0 Lecture Hours. 8 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 5130 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 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 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 5233 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 5233G.

GEOG 5240 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 5240G.

GEOG 5335 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 5335G.

GEOG 541 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 541G.

GEOG 5520 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 5520G, GEOG 3520G.

GEOG 5530 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 5530G.

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 economics, social, and environmental impacts through case studies. **Prerequisite(s):** GEOG 1101 or GEOG 1130 or permission of instructor. **Cross Listing(s):** GEOG 5532G.

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 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 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 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 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 5900G Selected Topics
1-9 Credit Hours. 0-9 Lecture Hours. 0-9 Lab Hours.
Offered with or without a lab on an experimental basis. Graduate students will complete an individual term project or special report.
Cross Listing(s): GEOG 5900.

GEOG 5091G Applied GIS
4 Credit Hours. 0 Lecture Hours. 8 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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.