

# DEPARTMENT OF GEOGRAPHY

## Contact Information

### Department of Geography

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## Introduction

Geography is the science of space, place, and environment. The department offers classes spanning the social and natural sciences and offering students training in qualitative, quantitative, spatial analysis and modelling, and laboratory methodologies. Human geographers study the spatial aspects of human activity and physical geographers study patterns of climate, land forms, soils and water. Geographic tools and techniques—including Geographic Information Systems, remote sensing, and online and interactive mapping technologies—are among the most important for exploring and understanding our complex world. Geographic inquiry is global and local, inherently interdisciplinary, and offers skills that enable insights into pressing issues valued by employers and policy makers. For example, how does climate change impact the way we build cities? How does globalization influence where your jeans are made? How can health disparities between people be overcome through policy change? By synthesizing this knowledge, geographers create unique understandings of our complex world.

Career opportunities for geographers are wide ranging in the public, private, and nongovernmental sectors. Geographers work in the areas of social, health, and environmental policy; energy, transportation, economic, development, and tourism planning; urban and regional planning; research and education; community development; resource management; and environmental regulation and modeling.

With geography you can explore the world and find yourself.

## Advising

All majors and minors have a primary academic advisor in Steele Building. Students are strongly encouraged to meet regularly with their advisor and review Tar Heel Tracker each semester. The department's director of undergraduate studies works with current and prospective majors by appointment and during regular office hours (see department Web site as hours will vary by semester). Departmental academic advising is highly recommended for all majors, in particular those considering graduate school. Further information on courses, undergraduate research opportunities, the honors program, careers, and graduate schools may be obtained from the department's Web site.

## Facilities

The department has a range of specialized, state-of-the-art equipment for geospatial field sampling and laboratory analysis of data in hydrology, climatology, and vegetation science, including an ecohydrology laboratory and a dendrology laboratory. The department is wired internally to support the latest network technology. This network links us to the centrally managed servers that provide access to a large library of software for geographic applications and research, as well as first-class library resources, data storage and backup, and access to supercomputing clusters.

## Graduate School and Career Opportunities

There are a variety of job opportunities for geographers in government, business, industry, and the nonprofit sector. Geographers are hired for the following kinds of expertise: locational analysis, GISci, remote sensing, cartography, land use planning, recreation and tourism planning, and foreign area expertise. Many geographers pursue teaching at all levels.

Students with a B.A. major in geography from UNC–Chapel Hill are well trained for graduate programs in geography and other disciplines. Majors have entered graduate programs as diverse as city and regional planning, business, medicine, and ecology. For more information about careers in geography, the UNC–Chapel Hill Department of Geography, degree requirements, and connections to other sites of interest, visit the department's Web site at [geography.unc.edu](http://geography.unc.edu) (<http://geography.unc.edu>).

### Major

- Geography Major, B.A. (<http://catalog.unc.edu/undergraduate/programs-study/geography-major-ba>)

### Minor

- Geography Minor (<http://catalog.unc.edu/undergraduate/programs-study/geography-minor>)

### Graduate Programs

- M.A. in Geography (<http://catalog.unc.edu/graduate/schools-departments/geography>)
- Ph.D. in Geography (<http://catalog.unc.edu/graduate/schools-departments/geography>)

## Professors

Michael E. Emch, John Pickles, Conghe Song, Stephen J. Walsh.

## Associate Professors

Javier A. Arce-Nazario, Altha J. Cravey, Banu P. Gökariksel, Clark Gray, Elizabeth Havice, Scott Kirsch, Charles E. Konrad, Nina Martin, Aaron Moody, Elizabeth Olson, Sara Smith, Gabriela Valdivia, Erika Wise.

## Assistant Professors

Xiaodong Chen, Jason Davis, Paul L. Delamater, Christian Lentz, Diego Riveros-Iregu.

## Professors Emeriti

Stephen Birdsall, John W. Florin, Wilbert M. Gesler, Richard J. Kopec, Peter J. Robinson, Thomas Whitmore.

## GEOG—Geography

### Undergraduate-level Courses

#### **GEOG 50. First-Year Seminar: Mountain Environments. 3 Credits.**

This course is on understanding the physical geography of mountain environments and the processes that have created them, shaped them, and sustained them.

**Gen Ed:** PL.

**Grading status:** Letter grade.

#### **GEOG 53. First-Year Seminar: Battle Park: Carolina's Urban Forest. 3 Credits.**

An introduction to the study of urban forest landscapes through a series of field experiences in Carolina's Battle Park.

**Gen Ed:** PL, EE-Field Work.

**Grading status:** Letter grade.

#### **GEOG 54. First-Year Seminar: Global Change and the Carolinas. 3 Credits.**

An examination of the ways in which change in the global physical environment, human induced and natural, might impact the Carolinas.

**Gen Ed:** PL.

**Grading status:** Letter grade.

#### **GEOG 55. First-Year Seminar: Landscape in Science and Art. 3 Credits.**

Explores viewing landscape from the perspective of science and of art, and investigates how an integration of both leads to a better understanding and appreciation of a landscape.

**Gen Ed:** SS.

**Grading status:** Letter grade.

#### **GEOG 56. First-Year Seminar: Local Places in a Globalizing World. 3 Credits.**

An examination of the relationship between globalization and localization in order to think about how we, as individuals and groups, can make a difference in the world.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

#### **GEOG 57. First-Year Seminar: Dogs and People: From Prehistory to the Urbanized Future. 3 Credits.**

People developed dogs as a living tool that is being modified to current urban social and demographic needs.

**Gen Ed:** SS.

**Grading status:** Letter grade.

#### **GEOG 58. First-Year Seminar: Making Myth-Leading Memories: Landscapes of Remembrance. 3 Credits.**

This course considers memorial landscapes created to reinforce values symbolized by the person, group, or event memorialized. It looks at how disagreements and cultural changes affect memorial landscape interpretation.

**Gen Ed:** SS.

**Grading status:** Letter grade.

#### **GEOG 59. First-Year Seminar: Space, Identity, and Power in the Middle East. 3 Credits.**

This seminar examines the role traditional and modern spaces play in representations of the Middle East and how Middle Easterners engage these contested spaces to construct their cultural and political identities.

**Gen Ed:** BN.

**Grading status:** Letter grade.

#### **GEOG 60. First-Year Seminar: What Is Health Care?. 3 Credits.**

This course will examine a variety of aspects of health care, including the biomedical system, health care in non-Western countries, alternative practitioners, beliefs about health, health policies, the role of various media, and healthy places. The emphasis is on the social sciences (geography, anthropology, sociology, mainly) of health.

**Gen Ed:** SS.

**Grading status:** Letter grade.

#### **GEOG 61. First-Year Seminar: Climate Change in the American Southeast. 3 Credits.**

Seminar participants, working in small groups, will run climate models and investigate current climate trends, combining the results to create scenarios of future climate for the southeast United States.

**Gen Ed:** SS.

**Grading status:** Letter grade.

#### **GEOG 62. First-Year Seminar: The Culture of Technology. 3 Credits.**

This first-year seminar uses the lens of culture to explore systems of meaning and values, and relations of social power, that are invested in technologies.

**Gen Ed:** PH, CI.

**Grading status:** Letter grade.

#### **GEOG 63. First-Year Seminar: The Problem with Nature and Its Preservation. 3 Credits.**

Alternative conceptualizations of nature in Western culture and how these meanings help create the landscapes in which we live and allow us to evaluate the implications of efforts to preserve nature.

**Gen Ed:** PH.

**Grading status:** Letter grade.

#### **GEOG 64. First-Year Seminar: Vietnam. 3 Credits.**

Explores modern Vietnam and situates the American war in broader spatial and historical context. Draws on fact, fiction, and visual media to introduce a fascinating place, rich in history, and to animate a geographic imagination students can take anywhere.

**Gen Ed:** HS, BN.

**Grading status:** Letter grade.

#### **GEOG 65. First-Year Seminar: Climate Change and the Media. 3 Credits.**

Examines the popular debate on global warming and its presentation in the media. Covers the scientific basis of climate change, focusing on how the science is presented, distorted, and debated in the public sphere.

**Gen Ed:** PL, CI.

**Grading status:** Letter grade.

#### **GEOG 65H. First-Year Seminar: Climate Change and the Media. 3 Credits.**

Examines the popular debate on global warming and its presentation in the media. Covers the scientific basis of climate change, focusing on how the science is presented, distorted, and debated in the public sphere.

**Gen Ed:** PL, CI.

**Grading status:** Letter grade.

#### **GEOG 67. First-Year Seminar: Politics of Everyday Life. 3 Credits.**

Seminar examines the ways that politics, especially contests over territory, are part of our day-to-day life. We will explore a range of cases, from immigration policy and rhetoric in the United States, to popular representations of geopolitics in film, to the politics of family planning in India.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 89. First Year Seminar: Special Topics. 3 Credits.**

Special Topics Course. Content will vary each semester.

**Repeat rules:** May be repeated for credit; may be repeated in the same term for different topics; 6 total credits. 2 total completions.

**Grading status:** Letter grade.

**GEOG 110. The Blue Planet: An Introduction to Earth's Environmental Systems. 3 Credits.**

Emphasizes geographic patterns and interrelationships in energy, climate, terrain, and life. Develops integrative view of how atmospheric, hydrologic, geomorphic, and biotic processes create global patterns in the environment. Incorporates influence of human activities on earth. Class will help students understand the natural environment, both globally and in North Carolina.

**Gen Ed:** PL.

**Grading status:** Letter grade.

**GEOG 110H. The Blue Planet: An Introduction to Earth's Environmental Systems. 3 Credits.**

Emphasizes geographic patterns and interrelationships in energy, climate, terrain, and life. Develops integrative view of how atmospheric, hydrologic, geomorphic, and biotic processes create global patterns in the environment. Incorporates influence of human activities on earth. Class will help students understand the natural environment, both globally and in North Carolina.

**Gen Ed:** PL.

**Grading status:** Letter grade.

**GEOG 111. Weather and Climate. 3 Credits.**

An introduction to the nature and causes of weather variability and climate change and their impact on human activity. No laboratory. (Core)

**Gen Ed:** PL.

**Grading status:** Letter grade.

**GEOG 115. Maps: Geographic Information from Babylon to Google. 3 Credits.**

Introduces the science and art of map making and will lay the conceptual foundation necessary to understand how and why maps are made and used.

**Grading status:** Letter grade.

**GEOG 120. World Regional Geography. 3 Credits.**

A survey of the geographic structure of human activity in major world regions and nations. Emphasizes current developments related to population, urbanization, and economic activity. (Core)

**Gen Ed:** SS, GL.

**Grading status:** Letter grade

**Same as:** PWAD 120.

**GEOG 121. Geographies of Globalization. 3 Credits.**

This course examines places and the connections between places to build critical understandings of the role of human geographies in global economic, political, social, and cultural systems. (Core)

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 123. Cultural Geography. 3 Credits.**

How population, environment, and human culture is expressed in technology and organization interact over space and time. (GHA)

**Gen Ed:** SS.

**Grading status:** Letter grade.

**GEOG 124. Gender and Place: Feminist Geographies. 3 Credits.**

This course explores the relationship between gender and place and introduces feminist approaches to key geographical concepts. We will study how places that we live in shape our gender identities and how gender relations affect our worlds. Topics include bodies, home, city, migration, development, nationalism, and war.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 125. Cultural Landscapes. 3 Credits.**

Explores how everyday culture helps create the landscapes and places in which we live and what these landscapes tell us about ourselves.

**Gen Ed:** SS.

**Grading status:** Letter grade.

**GEOG 130. Geographical Issues in the Developing World. 3 Credits.**

An introduction to historical and contemporary ideas about practices and meanings of development. Students will explore "development" in a global landscape of poverty, power, and struggles over inequality.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 130H. Geographical Issues in the Developing World. 3 Credits.**

An introduction to historical and contemporary ideas about practices and meanings of development. Students will explore "development" in a global landscape of poverty, power, and struggles over inequality.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 141. Geography for Future Leaders. 3 Credits.**

In this course, students develop geographic concepts and skills and use them to navigate real-world social and environmental challenges. Co-taught by a physical and human geographer, the course provides students with essential building blocks for becoming active and engaged leaders and citizens in a rapidly changing world.

**Gen Ed:** PL, GL.

**Grading status:** Letter grade.

**GEOG 210. Global Issues and Globalization. 3 Credits.**

Survey of international social, political, and cultural patterns in selected societies of Africa, Asia, America, and Europe, stressing comparative analysis of conflicts and change in different historical contexts. LAC recitation sections offered in French, German, and Spanish.

**Gen Ed:** GL.

**Grading status:** Letter grade

**Same as:** GBLB 210, ANTH 210, HIST 210, POLI 210.

**GEOG 212. Environmental Conservation and Global Change. 3 Credits.**

Survey of environmental change as driven by physical processes and human activity. Problem-solving methods are explored. Focus on issues such as global warming, ozone depletion, deforestation, extinction, pollution, wetland loss. This course will provide significant background in physical geography in the context of today's most pressing environmental concerns and with reference to the societal implications and management strategies. (No lab.) (Core)

**Gen Ed:** PL, GL.

**Grading status:** Letter grade.

**GEOG 225. Space, Place, and Difference. 3 Credits.**

Gender, race, and class are examined in terms of the spatial patterns of everyday life, regional patterns, and global patterns. (GHA)

**Gen Ed:** SS.

**Grading status:** Letter grade

**Same as:** WGST 225.

**GEOG 228. Urban Geography. 3 Credits.**

Explores the evolution, patterns, and processes of urbanization and the development of cities and city systems. Emphasis on the origin, growth, and spatial distribution of cities and on the internal spatial organization of activities within cities. (GHA)

**Gen Ed:** SS.

**Grading status:** Letter grade.

**GEOG 232. Agriculture, Food, and Society. 3 Credits.**

A study of environmental parameters, cultural preferences, technological developments, and spatial economic infrastructure that result in world patterns of food consumption, production, and distribution. (GHA)

**Gen Ed:** SS.

**Grading status:** Letter grade.

**GEOG 237. Natural Resources. 3 Credits.**

An analysis of selected biological and mineral resources of the world with particular emphasis on their distribution, utilization, and management policies and on their social and economic implications. (GHA)

**Grading status:** Letter grade.

**GEOG 253. Introduction to Atmospheric Processes. 4 Credits.**

Includes one-hour laboratory. Atmospheric processes including radiation, dynamics, and thermodynamics are emphasized. Circulations across a range of temporal and spatial scales are described. Links between environmental problems and the atmosphere are explored.

**Requisites:** Prerequisites, MATH 231 and either CHEM 102 or PHYS 114.

**Grading status:** Letter grade

**Same as:** ENEC 253.

**GEOG 259. Geography of Latin America. 3 Credits.**

An introduction to Latin American geography through an examination of how the region came to be distinct and how social, political, and economic processes continue to define it. (Regional)

**Gen Ed:** SS, BN.

**Grading status:** Letter grade.

**GEOG 260. North America's Landscapes. 3 Credits.**

A survey of the cultural and physical landscapes of the United States and Canada. Emphasis on landscape evolution, present distributions, and interactions between people and their environment. (Regional)

**Gen Ed:** SS, NA.

**Grading status:** Letter grade.

**GEOG 261. The South. 3 Credits.**

Present-day Southern United States, approached historically through a study of its physical, economic, and cultural environment. (Regional)

**Grading status:** Letter grade.

**GEOG 262. Geography of North Carolina. 3 Credits.**

A survey of the cultural, economic, and physical diversity of North Carolina. Emphasizes regional patterns, historical changes, and the appearance of the landscape. (Regional)

**Gen Ed:** NA.

**Grading status:** Letter grade.

**GEOG 263. Environmental Field Studies in Siberia. 4 Credits.**

This course explores the biogeography of Siberia and gives students practical training on how to do field work in field ecology and physical geography.

**Grading status:** Letter grade

**Same as:** ENEC 263.

**GEOG 264. Conservation of Biodiversity in Theory and Practice. 3 Credits.**

This course will give students a multidisciplinary introduction to growing field of biodiversity preservation.

**Requisites:** Prerequisite, ENEC 201; permission of the instructor for students lacking the prerequisite.

**Grading status:** Letter grade

**Same as:** ENEC 264.

**GEOG 265. Eastern Asia. 3 Credits.**

Spatial structure of population, urbanization, agriculture, industrialization, and regional links in China, Japan, and Korea. (Regional)

**Grading status:** Letter grade

**Same as:** ASIA 265.

**GEOG 266. People and Environment in Southeast Asia. 3 Credits.**

Sociological, biophysical, and geographical elements are integrated to examine interactions of population and environment in Thailand and neighboring countries. Diverse data sources and perspectives will be used to examine local to global issues. (Regional)

**Gen Ed:** SS, BN, GL.

**Grading status:** Letter grade.

**GEOG 267. South Asia. 3 Credits.**

Introduces students to the geography of South Asia, including an overview of the physical environment, cultural practices, and economic development. Emphasizes the political geography of South Asia and political and social processes such as nationalism and colonialism that have played a formative role in the region.

**Gen Ed:** BN.

**Grading status:** Letter grade

**Same as:** ASIA 267.

**GEOG 268. Geography of Africa. 3 Credits.**

Focuses on dynamic sociocultural, political, economic, and environmental issues shaping contemporary sub-Saharan Africa to develop an understanding of major drivers of stark physical, environmental, and socioeconomic contrasts across the continent and trajectories for the future. Themes include land use and environmental change, historical legacies, urbanization, economic growth, and trade.

**Gen Ed:** SS, BN.

**Grading status:** Letter grade.

**GEOG 269. Human-Environment Interactions in the Galapagos Islands. 3 Credits.**

The Social and ecological implications of resource conservation and economic development in a World Heritage Site are examined in the Galapagos Islands of Ecuador.

**Gen Ed:** PL, BN.

**Grading status:** Letter grade.

**GEOG 270. Geography of Contemporary China. 3 Credits.**

This course provides a systematic introduction to China as an emerging political and economic power. From a geographic perspective, this course addresses uneven human and physical landscapes, the historical evolution and current status of the natural environment, economic development, and human well being.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 295. Undergraduate Research in Geography. 3 Credits.**

Permission of the instructor. For students who wish to participate in departmental research programs. May be taken twice.

**Repeat rules:** May be repeated for credit. 6 total credits. 2 total completions.

**Grading status:** Letter grade.

**GEOG 296. Independent Study. 1-12 Credits.**

Permission of the instructor. Special reading and research in geography under the supervision of a selected instructor. Course may not be taken more than twice.

**Repeat rules:** May be repeated for credit. 12 total credits. 4 total completions.

**Grading status:** Letter grade.

**GEOG 341. Hydrology, Ecology, and Sustainability of the Humid Tropics. 3 Credits.**

The Tropics have some of the largest river flows in the world. Three billion people live in humid tropical regions, yet many of them lack adequate water supply. This course focuses on the water cycle of tropical regions and the interactions between hydrology and ecology with an emphasis on sustainability.

**Gen Ed:** PL, GL.

**Grading status:** Letter grade.

**GEOG 370. Introduction to Geographic Information. 3 Credits.**

A survey of geographic data sources including maps, photos, digital images, Census information, and others. Emphasis is on appropriate uses, limitations, and skilled interpretation in physical and human geography applications. (Core)

**Grading status:** Letter grade.

**GEOG 390. Contemporary Topics in Geography. 1-12 Credits.**

Exploration of topics in contemporary geography.

**Repeat rules:** May be repeated for credit; may be repeated in the same term for different topics; 12 total credits. 4 total completions.

**Grading status:** Letter grade.

**GEOG 391. Quantitative Methods in Geography. 3 Credits.**

This course provides an introduction to the application of statistical methods to geographic problems and to statistical packages in their solution. Attention given to spatial data analysis and sampling methods.

**Grading status:** Letter grade.

**GEOG 392. Research Methods in Geography. 3 Credits.**

Introduces geographic research methods and develops skills to conduct independent research. Themes include spatial analysis, knowledge production, methodology, theory and evidence, and principles of informed argument. Students gain experience with multiple methods applicable to the study of diverse topics.

**Gen Ed:** SS.

**Grading status:** Letter grade.

**Advanced Undergraduate and Graduate-level Courses****GEOG 406. Atmospheric Processes II. 4 Credits.**

Principles of analysis of the atmosphere are applied to the analysis of environmental phenomena. The link between the atmosphere and other environmental compartments is explored through environmental case studies.

**Grading status:** Letter grade

**Same as:** ENEC 406.

**GEOG 410. Modeling of Environmental Systems. 3 Credits.**

Uses systems theory and computer models to understand ecosystem energy and matter flows, such as energy flow in food webs, terrestrial ecosystem evapotranspiration and productivity, related to climate, vegetation, soils, and hydrology across a range of spatial and temporal scales.

**Gen Ed:** QI.

**Grading status:** Letter grade.

**GEOG 412. Synoptic Meteorology. 3 Credits.**

An analysis of synoptic weather patterns and the processes responsible for them. Climatological aspects of these weather patterns are emphasized. (EES)

**Requisites:** Prerequisite, GEOG 110 or 111.

**Grading status:** Letter grade.

**GEOG 414. Climate Change. 3 Credits.**

An investigation of the scientific basis of climate change (past, present, and future), the current state of knowledge concerning future projections, and the implications of climate change for society and the environment.

**Grading status:** Letter grade.

**GEOG 416. Applied Climatology: The Impacts of Climate and Weather on Environmental and Social Systems. 3 Credits.**

Applied climatology involves the interdisciplinary application of climate data and techniques to solve a wide range of societal and environmental problems. This projects-based course investigates how climate impacts a range of sectors, including water resources, urban environments, ecosystems, and human health.

**Gen Ed:** PL.

**Grading status:** Letter grade.

**GEOG 419. Field Methods in Physical Geography. 3 Credits.**

Involves evaluation of landscapes by examining nature and biophysical elements influencing landscape form and function. Course emphasizes data collection, analysis, and interpretation using GIS and field methods. (EES)

**Gen Ed:** EE-Field Work.

**Grading status:** Letter grade.

**GEOG 423. Social Geography. 3 Credits.**

A study of the spatial components of current social problems, such as poverty, race relations, environmental deterioration and pollution, and crime. (GHA)

**Grading status:** Letter grade.

**GEOG 424. Geographies of Religion. 3 Credits.**

This course considers the theoretical and empirical dimensions of religion from a geographical perspective. The course introduces the key theories linking space, place, and religion and helps students apply these new theoretical tools to examine some of the pressing issues in the contemporary study of religion.

**Gen Ed:** CI, GL.

**Grading status:** Letter grade.

**GEOG 428. Urban Social Geography: Global Cities. 3 Credits.**

Studies the changing landscapes of contemporary urbanism. Emphasis on patterns of economic development, housing, and infrastructure in cities in a global context. (GHA)

**Grading status:** Letter grade

**Same as:** PLAN 428.

**GEOG 429. Urban Political Geography: Durham, NC. 3 Credits.**

An interdisciplinary exploration of urban social problems, bridging the literature on urban geography with that on urban politics. Students will be required to complete 30 hours of service for an organization that works on an urban social issue.

**Gen Ed:** SS, EE-Service Learning.

**Grading status:** Letter grade.

**GEOG 430. Global Migrations, Local Impacts: Urbanization and Migration in the United States. 3 Credits.**

This course explores the relationship between patterns of urban development in the United States and migration, in both historical and contemporary contexts.

**Gen Ed:** SS, NA.

**Grading status:** Letter grade.

**GEOG 434. Cultural Ecology of Agriculture, Urbanization, and Disease. 3 Credits.**

Examines the role of the interactions of cultures, environments, and human diseases in the quest for sustainable agriculture by examining the cultural ecology of agriculture systems and their human diseases. (GHA)

**Gen Ed:** GL.

**Grading status:** Letter grade.

**GEOG 435. Environmental Politics. 3 Credits.**

This course brings geographical perspectives on place, space, scale, and environmental change to the study of environmental politics. In lectures, texts, and student research, students examine topics including environmental health risks, globalization and urban environments, and the role of science in environmental politics. (GHA)

**Gen Ed:** NA.

**Grading status:** Letter grade.

**GEOG 436. Governance, Institutions, and Global Environmental Change. 3 Credits.**

Interdisciplinary course for advanced undergraduates and graduate students. Focuses on multiscale environmental issues and related social, institutional, governance, and policy challenges. Examines key concepts and theories involving global environmental change and problem-solving efforts.

**Gen Ed:** GL.

**Grading status:** Letter grade.

**GEOG 440. Earth Surface Processes. 3 Credits.**

This course will focus on the processes of soil formation, erosion, and landform evolution with an emphasis on the interaction of geomorphic processes with surface hydrology and ecosystems. (EES)

**Requisites:** Prerequisite, GEOG 110.

**Gen Ed:** PL.

**Grading status:** Letter grade

**Same as:** GEOL 502.

**GEOG 441. Introduction to Watershed Systems. 3 Credits.**

Introduction to hydrologic and geomorphic processes and forms in watersheds as applied to problems in flood analysis, water quality, and interactions with ecosystem processes. Covers drainage networks, nested catchments, and distribution and controls of precipitation, evaporation, runoff, and groundwater flow. (EES)

**Requisites:** Prerequisite, ENEC 202, GEOG 110, or GEOL 213; permission of the instructor for students lacking the prerequisite.

**Gen Ed:** PL.

**Grading status:** Letter grade.

**GEOG 442. River Processes. 3 Credits.**

Introduction to landforms and processes associated with flowing water at the earth's surface. Hydrology, sedimentology, and theories of channel formation and drainage basin evolution. (ESS)

**Grading status:** Letter grade.

**GEOG 444. Landscape Biogeography. 3 Credits.**

This course is concerned with the application of biogeographical principles and techniques to the study of natural and human-modified landscapes. It includes local and extraregional case studies. (EES)

**Grading status:** Letter grade.

**GEOG 445. Medical Geography. 3 Credits.**

The human ecology of health is studied by analyzing the cultural/environmental interactions that lie behind world patterns of disease distribution, diffusion, and treatment, and the ways these are being altered by development. (GHA)

**Gen Ed:** GL.

**Grading status:** Letter grade.

**GEOG 446. Geography of Health Care Delivery. 3 Credits.**

This course covers basics, including personnel and facility distributions, accessibility, regionalization, and location/allocation modeling; spatial analysis and GIS; and the cultural geography of health care, including humanist and political-economic perspectives. (GHA)

**Grading status:** Letter grade.

**GEOG 447. Gender, Space, and Place in the Middle East. 3 Credits.**

Examines gender, space, and place relationships in the modern Middle East. Investigates shifting gender geographies of colonialism, nationalism, modernization, and globalization in this region. (GHA)

**Grading status:** Letter grade

**Same as:** ASIA 447, WGST 447.

**GEOG 448. Transnational Geographies of Muslim Societies. 3 Credits.**

Examines modern Muslim geographies that are created by transnational flows, connections, and imaginaries that cross national and regional boundaries across the Middle East, Southeast Asia, and beyond.

**Grading status:** Letter grade.

**GEOG 451. Population, Development, and the Environment. 3 Credits.**

Introduction to contemporary and historical changes in human population, international development, and the global environment and how these processes interact, drawing on population geography as an organizing framework. Previously offered as GEOG 450.

**Gen Ed:** GL.

**Grading status:** Letter grade

**Same as:** ENEC 451.

**GEOG 452. Mobile Geographies: The Political Economy of Migration. 3 Credits.**

This course explores the contemporary experience of migrants. Various theoretical approaches are introduced, with the emphasis on a political-economic approach. (GHA)

**Gen Ed:** EE-Field Work, GL.

**Grading status:** Letter grade.

**GEOG 453. Political Geography. 3 Credits.**

The geography of politics is explored at the global, the nation-state, and the local scale in separate course units, but the interconnections between these geographical scales are emphasized throughout. (GHA)

**Gen Ed:** GL.

**Grading status:** Letter grade

**Same as:** PWAD 453.

**GEOG 454. Historical Geography of the United States. 3 Credits.**

A study of selected past geographies of the United States with emphasis on the significant geographic changes in population, cultural, and economic conditions through time. (GHA)

**Grading status:** Letter grade

**Same as:** FOLK 454.

**GEOG 457. Rural Latin America: Agriculture, Environment, and Natural Resources. 3 Credits.**

This course explores a systems and cultural-ecological view of agriculture, environment, natural resource, and rural development issues in Latin America. It serves as a complement to GEOG 458 Urban Latin America. (Regional)

**Requisites:** Prerequisite, GEOG 259; permission of the instructor for students lacking the prerequisite.

**Grading status:** Letter grade.

**GEOG 458. Urban Latin America: Politics, Economy, and Society. 3 Credits.**

This course examines urban social issues in contemporary Latin America. Cities and their residents will be considered in relation to each other and to North American examples. (Regional)

**Requisites:** Prerequisite, GEOG 259; permission of the instructor for students lacking the prerequisite.

**Gen Ed:** BN.

**Grading status:** Letter grade.

**GEOG 460. Geographies of Economic Change. 3 Credits.**

This course is designed to explore changing geographies of production and consumption in theory and in practice.

**Grading status:** Letter grade.

**GEOG 464. Europe Today: Transnationalism, Globalisms, and the Geographies of Pan-Europe. 3 Credits.**

A survey by topic and country of Europe west of Russia. Those features that make Europe a distinct and important region today are emphasized. (Regional)

**Gen Ed:** NA.

**Grading status:** Letter grade.

**GEOG 470. Political Ecology: Geographical Perspectives. 3 Credits.**

Examines foundational concepts and methods and their relevance for understanding nature-society relationships. Discussions on environmental change and conflict and how nature is bound up with relations of power and constructions of identity.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 477. Introduction to Remote Sensing of the Environment. 3 Credits.**

Covers fundamental theory and mechanics of remote sensing, related theoretical aspects of radiation and the environment, and remote-sensing applications relating to terrestrial, atmospheric, and marine environments. Hands-on experience for application and information extraction from satellite-based imagery through biweekly laboratory assignments. Prepares students for GEOG 577. (GISc)

**Requisites:** Prerequisite, GEOG 370.

**Grading status:** Letter grade.

**GEOG 480. Liberation Geographies: The Place, Politics, and Practice of Resistance. 3 Credits.**

An examination of the theory and history of resistance in the modern world, including instances of contestation from 'foot dragging' to the formation of social movements, and exploring the relationship between place and protest.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 481. Ethnographies of Globalization: An Upper-Level Research Design Class. 3 Credits.**

Examines critical perspectives on globalization through research interviews conducted by social scientists working on topics ranging from land reform in Brazil to international banking.

**Gen Ed:** SS, GL.

**Grading status:** Letter grade.

**GEOG 491. Introduction to GIS. 3 Credits.**

Stresses the spatial analysis and modeling capabilities of organizing data within a geographic information system. (GISci)

**Requisites:** Prerequisite, GEOG 370; permission of the instructor for students lacking the prerequisite.

**Grading status:** Letter grade

**Same as:** PLAN 491.

**GEOG 493. Internship. 3 Credits.**

Open to junior and senior geography majors. Geography internships combine substantive geographic work experience with an academic project designed to integrate theory and practice. Field work is included.

**Gen Ed:** EE-Academic Internship.

**Repeat rules:** May be repeated for credit. 6 total credits. 2 total completions.

**Grading status:** Letter grade.

**GEOG 541. GIS in Public Health. 3 Credits.**

Explores theory and application of geographic information systems (GIS) for public health. The course includes an overview of the principles of GIS in public health and practical experience in its use. (GISci)

**Grading status:** Letter grade.

**GEOG 542. Neighborhoods and Health. 3 Credits.**

This course explores how neighborhood context influences the health of the populations living in them. It includes a survey of neighborhoods and health theory and empirical examples. (GHA)

**Grading status:** Letter grade.

**GEOG 543. Qualitative Methods in Geography. 3 Credits.**

This course teaches qualitative methods in geography for graduate and advanced undergraduate students. We will cover interviews, focus groups, visual, and other methodologies. We will also discuss modes of analysis, coding, and writing up qualitative research for publication.

**Gen Ed:** SS, CI.

**Grading status:** Letter grade.

**GEOG 577. Advanced Remote Sensing. 3 Credits.**

Acquisition, processing, and analysis of satellite digital data for the mapping and characterization of land cover types. (GISci)

**Requisites:** Prerequisite, GEOG 370 or 477.

**Grading status:** Letter grade.

**GEOG 591. Applied Issues in Geographic Information Systems. 3 Credits.**

Applied issues in the use of geographic information systems in terrain analysis, medical geography, biophysical analysis, and population geography. (GISci)

**Requisites:** Prerequisite, GEOG 370, 491, or equivalent.

**Grading status:** Letter grade.

**GEOG 592. Geographic Information Science Programming. 3 Credits.**

This course will teach students the elements of GISci software development using major GIS platforms. Students will modularly build a series of applications through the term, culminating in an integrated GIS applications program.

**Requisites:** Prerequisite, GEOG 370 or 491.

**Grading status:** Letter grade.

**GEOG 594. Global Positioning Systems and Applications. 3 Credits.**

Global Positioning Systems (GPS) fundamental theory, application design, post processing, integration of GPS data into GIS and GPS application examples (such as public health, business, etc.) will be introduced.

**Requisites:** Prerequisite, GEOG 370.

**Grading status:** Letter grade.

**GEOG 597. Ecological Modeling. 3 Credits.**

This course focuses on modeling the terrestrial forest ecosystems processes, including population dynamics, energy, water, nutrients, and carbon flow through the ecosystem. (GISci)

**Requisites:** Prerequisite, BIOL 561 or STOR 455; permission of the instructor for students lacking the prerequisite.

**Grading status:** Letter grade.

**GEOG 650. Technology and Democracy Research. 3 Credits.**

Are technological choices open to democratic participation? Through a novel research workshop format, this graduate and undergraduate course explores political and geographical dimensions of technological change around key environmental issues—energy, water, and waste.

**Gen Ed:** SS, CI, EE-Service Learning.

**Grading status:** Letter grade.

**GEOG 691H. Honors. 3 Credits.**

By permission of the department. Required of all students aspiring to honors in geography. Directed readings, research, and writing.

**Gen Ed:** EE-Mentored Research.

**Grading status:** Letter grade.

**GEOG 692H. Honors. 3 Credits.**

Required of all students aspiring to honors in geography. Preparation of a senior thesis.

**Requisites:** Prerequisite, GEOG 691H.

**Gen Ed:** EE-Mentored Research.

**Grading status:** Letter grade.

**GEOG 697. Capstone Seminar in Geographic Research. 3 Credits.**

A systematic study of the approaches, key concepts, and methods of geography, emphasizing the application of these approaches through hands-on independent research designed and implemented by the students. (Core)

**Grading status:** Letter grade.