GEOGRAPHY (GEOG)

GEOG 101 – INTRODUCTION TO HUMAN GEOGRAPHY
4 credits.

Human geographers explore socio-spacial relations, processes and representations of the world in which we live. Engages economic, political, urban, socio-cultural and environmental geographic perspectives to investigate patterns and processes that have come to be associated with 'globalization'.
Requisites: Not open to students with credit for GEOG 104
Course Designation: Gen Ed - Communication Part B
Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Define key human geographic concepts, including place, space, territory, imagined geographies, and geopolitics.
Audience: Undergraduate

2. Identify human geographic concepts in everyday life and current events.
Audience: Undergraduate

3. Discuss the defining features and contributions of some human geography subareas.
Audience: Undergraduate

4. Explain how political and economic dynamics, past and present, have created uneven geographies across the globe and at different scales.
Audience: Undergraduate

5. Discuss interdependencies (and conflicts) across the globe, among nation-states, within cities, between humans and non-humans.
Audience: Undergraduate

6. Discuss the role of nation-states in spatializing sovereignty and regulating mobility.
Audience: Undergraduate

7. Discuss how spatial divisions are created, the power such divisions have in different groups of people's lives, and how people try to reshape these dynamics.
Audience: Undergraduate

8. Share course content and demonstrate key course concepts via writing and speaking.
Audience: Undergraduate

GEOG 104 – INTRODUCTION TO HUMAN GEOGRAPHY
3 credits.

Human geographers explore socio-spacial relations, processes and representations of the world in which we live. Engages economic, political, urban, socio-cultural and environmental geographic perspectives to investigate patterns and processes that have come to be associated with 'globalization'.
Requisites: Not open to students with credit for GEOG 101
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No

GEOG/ENVIR ST 120 – INTRODUCTION TO THE EARTH SYSTEM
3 credits.

Introduction to how the Earth system works and what makes Earth livable. Gain appreciation for how the atmosphere, oceans, life, and earth's surface interact to shape our local, regional and global landscapes.
Requisites: Not open to students with credit for ENVIR ST/GEOG 127
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG/ENVIR ST 127 – PHYSICAL SYSTEMS OF THE ENVIRONMENT
4 credits.

An introduction to natural environmental systems, emphasizing the interconnections between the systems of the solid earth (minerals, rocks, soils), the hydrosphere (water in all its forms), the biosphere, and the atmosphere. Emphasizes connections between basic concepts and specific environmental issues through hands-on case studies, lab projects, and field trips to collect samples and observations for lab projects.
Requisites: Not open to students with credit for ENVIR ST/GEOG 120
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Describe at a basic level the most important processes of the Earth system, including formation and weathering of rocks and minerals, soil development and erosion, atmospheric circulation, and the global cycles of water and carbon.
Audience: Undergraduate

2. Apply concepts from this course to understand environmental issues such as global climate change and the sustainability of agriculture, and natural hazards such as earthquakes and floods, and make informed contributions to public debate and decision-making on how to address these issues and hazards.
Audience: Undergraduate

3. Identify important research methods, through case studies and labs, that are the basis of modern Earth system science.
Audience: Undergraduate

GEOG/ENVIR ST 139 – GLOBAL ENVIRONMENTAL ISSUES
3 credits.

Explores the global and local nature of environmental problems, including issues of climate change, food, energy, globalization, deforestation, biodiversity loss, resource access, environmental justice, and population. Considers how we should analyze and act on environmental problems as we confront the apparently daunting scale of such issues. What appear to be single global environmental issues are actually composed of many smaller, context-specific, and place-dependent problems or conflicts. Through an interdisciplinary and geographic perspective, these issues can be understood and addressed at the scale of our lived lives.
Requisites: None
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Explain the scientific basis of climate change, population growth, desertification, deforestation, water quality and quantity impairments, and the environmental challenges of agriculture and energy production.
Audience: Undergraduate

2. Critically assess the causal factors and drivers associated with global environmental issues.
Audience: Undergraduate

3. Explain the political context in which environmental issues are framed as global problems.
Audience: Undergraduate

4. Identify potential solutions to global environmental issues, and obstacles to their implementation.
Audience: Undergraduate

5. Describe your own relationship to global environmental issues and how global environmental issues manifest locally.
Audience: Undergraduate

GEOG 170 – OUR DIGITAL GLOBE: AN OVERVIEW OF GISCIENCE AND ITS TECHNOLOGY
3 credits.

Introduction to the collection, representation and use of geospatial data. Introduction to geospatial technologies like GPS, Google Earth, satellite imagery, and GIS, and provides a critical understanding of the strengths and limitations of spatial representations (e.g., maps, images).
Requisites: None
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe fundamental concepts and knowledge in geospatial fields, such as geospatial data, geographic coordinates, geographic coordinate systems, projection, maps, etc.
Audience: Undergraduate

2. Analyze and interpret aerial photos and remote sensing images.
Audience: Undergraduate

3. Describe the functionality of maps.
Audience: Undergraduate

4. Design and make a map using GIS tools (e.g., ArcGIS online).
Audience: Undergraduate

5. Build a solid foundation for more specialized courses on GIS, cartography, remote sensing, and GPS.
Audience: Undergraduate

6. Identify several widely used geospatial software and tools (e.g., Google Earth).
Audience: Undergraduate

GEOG 175 — TOPICS IN GEOGRAPHY
3 credits.

Explores emerging topics in human geography (e.g., economic geography, urban geography, political geography) and people-environment geography (e.g., political ecology, environmental history).
Requisites: None
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026
Learning Outcomes: 1. Explain foundational concepts in human geography and people-environment geography.
Audience: Undergraduate

2. Identify social scientific theories and methods and apply them to geographical issues.
Audience: Undergraduate

3. Connect pressing social and ecological issues to human and people-environment geographical theory and methods.
Audience: Undergraduate

GEOG 198 — DIRECTED STUDY
1-2 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2013

GEOG 199 — DIRECTED STUDY
1-2 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2004

GEOG/ENVIR ST/SOIL SCI 230 — SOIL: ECOSYSTEM AND RESOURCE
3 credits.

Soils are fundamental to ecosystem science. A systems approach is used to investigate how soils look and function. Topics investigated include soil structure, biology, water, fertility, and taxonomy as well as the human impact on the soil environment.
Requisites: Not open to students with credit for SOIL SCI 301
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe the significance of soil and its properties

Audience: Undergraduate

2. Identify and describe key components of soil solids and pores
Audience: Undergraduate

3. Explain and predict the interaction of water with soil
Audience: Undergraduate

4. Interpret basic nomenclature used in soil science
Audience: Undergraduate

5. Analyze that causes and solutions for sustainability of soil resources
Audience: Undergraduate

6. Quantify the interaction of clay surfaces with a soil solution
Audience: Undergraduate

7. Describe the role of soils in many different ecosystems
Audience: Undergraduate

8. Link soil orders with biomes and describe soil's edaphic character
Audience: Undergraduate

9. Analyze sustainability issues using a systems-based approach
Audience: Undergraduate

GEOG/ART HIST/ENVIR ST/HISTORY/LAND ARC 239 – MAKING THE AMERICAN LANDSCAPE
3-4 credits.

Traces the history and evolution of the American cultural landscape from precolonial times to present. Explores how class, ethnic, and racial inequality have shaped the appearance of the American landscape over time, and how that landscape in turn has affected relationships between people and groups through the present day. Examines extraordinary things (civic structures (like our State Capitol), National Parks, War Memorials) and more ordinary kinds of places (mining towns, cotton plantations, sites of recreation and leisure, and suburban tract housing) to stimulate critical thinking about how these places have served people and groups unequally and disproportionately over time and across space. Considers complex meanings of American spaces and places to different people and groups, stimulating empathy and encouraging participation in a multicultural society.
Requisites: None
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe and interpret the American landscape as a richly layered historical document mediated by complex relationships between people and groups
Audience: Undergraduate

2. Explain how the American cultural landscape has affected present day circumstances regarding ethnicity and race as well as racial and ethnic inequalities
Audience: Undergraduate

3. Articulate ways in which historical change manifest in buildings, enclosed spaces, and other elements of the American landscape reveal racial, ethnic, class and gender dynamics between and among people and groups over time
Audience: Undergraduate

4. Enlist forms of historical evidence – maps (current and historic), photographs (aerial and otherwise), historical newspapers, census records, deeds and land records – to interpret landscapes and landscape change
Audience: Undergraduate

5. Explain the American landscape as a product of competing interests, which will demonstrate self-awareness and empathy toward the cultural perspectives and worldviews of others
Audience: Undergraduate

GEOG/ASIAN/HISTORY/POLI SCI/SOC 244 – INTRODUCTION TO SOUTHEAST ASIA: VIETNAM TO THE PHILIPPINES
4 credits.

As an introduction to Southeast Asia, covers the ethnic, cultural, religious, and political histories of the region from the classical states period to the present, with an emphasis on colonialism, nationalism, decolonization, and the emergence of modern political and social systems into the 21st century, including an exposure to region's contemporary literature. Not open to students who completed LCA 244 prior to Fall 2019.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Examine the ethnic, cultural, religious, and political histories of Southeast Asia from the classical states period to the present.
Audience: Undergraduate

2. Analyze colonialism, nationalism, decolonization, and the emergence of modern political and social systems into the 21st century in Southeast Asia.

Audience: Undergraduate

3. Explore contemporary literature in Southeast Asia.
Audience: Undergraduate

GEOG/HISTORY/POLI SCI/SLAVIC 253 – RUSSIA: AN INTERDISCIPLINARY SURVEY
4 credits.

Comprehensive interdisciplinary survey of Russian civilization from its beginnings through the present day.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2025

GEOG/HISTORY/POLI SCI/SLAVIC 254 – EASTERN EUROPE: AN INTERDISCIPLINARY SURVEY
4 credits.

Comprehensive interdisciplinary survey of East European culture, society, politics, and literature from its beginnings to the present day.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG/AFROAMER/ANTHRO/C&E SOC/HISTORY/LACIS/ POLI SCI/SOC/SPANISH 260 — LATIN AMERICA: AN INTRODUCTION
3-4 credits.

Latin American culture and society from an interdisciplinary perspective; historical developments from pre-Columbian times to the present; political movements; economic problems; social change; ecology in tropical Latin America; legal systems; literature and the arts; cultural contrasts involving the US and Latin America; land reform; labor movements; capitalism, socialism, imperialism; mass media.
Requisites: None
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Analyze Latin American culture and society from an interdisciplinary perspective.
Audience: Undergraduate

2. Examine historical developments from pre-Columbian times to the present.
Audience: Undergraduate

3. Identify political movements, economic problems, social change, and ecology in Latin America.
Audience: Undergraduate

GEOG/AFRICAN/AFROAMER/ANTHRO/HISTORY/POLI SCI/ SOC 277 — AFRICA: AN INTRODUCTORY SURVEY
4 credits.

African society and culture, polity and economy in multidisciplinary perspectives from prehistory and ancient kingdoms through the colonial period to contemporary developments, including modern nationalism, economic development and changing social structure.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Analyze African society and culture from a multidisciplinary perspective.
Audience: Undergraduate

2. Discuss polity and economy from prehistory and ancient kingdoms through the colonial period to contemporary developments.
Audience: Undergraduate

3. Study contemporary nationalism, economic development and changing social structure.
Audience: Undergraduate

GEOG 300 — WEIRD GEOGRAPHIES
3 credits.

An opportunity to re-imagine human geography. The history of geography is particularly violent and exclusive. It is well known that systems of colonialist exploitation, theft, kidnapping, and murder were facilitated in part by the work of modern cartographers and "explorers." The discipline that we have today is a product of these earlier colonial epistemologies and ideologies. The science that emerged from these fields - geography - institutionalizes and reproduces many the ideas and viewpoints of their modern practitioners. Creates a space to re-imagine and re-invent what the field of human geography might be. Interrogates the colonial history of geography as a social science and practice. Explores several ways of thinking about space and social life that might not fit cleanly into the discipline at large.
Requisites: Sophomore standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2024
Learning Outcomes: 1. Describe many of the key debates, concepts, objects, and problems in geography.
Audience: Undergraduate

2. Read and research critical scholarship.
Audience: Undergraduate

3. Critically analyze several theoretical, practical, and scientific perspectives on space and place.
Audience: Undergraduate

4. Identify effective strategies for developing and conducting interdisciplinary research.
Audience: Undergraduate

5. Recall approaches to researching sociospatial topics.
Audience: Undergraduate

6. Identify the basics of writing and editing academic theoretical research.

Audience: Undergraduate

7. Develop curriculum that considers geography in a new light.
Audience: Undergraduate

GEOG 301 – REVOLUTIONS AND SOCIAL CHANGE
3 credits.

An introduction to the spatial dimensions of social movements, social struggles, and radical social change. Provides a range of critical and theoretical perspectives for reading and interpreting space as a tool of social transformation. Explores a variety of historical examples from the nineteenth century to the present.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Identify the key debates in Social and Radical Geography.
Audience: Both Grad & Undergrad

2. Demonstrate the basics of social movements, including their strategies, tactics, and spatialities.
Audience: Both Grad & Undergrad

3. Summarize the key issues in the recent history of social struggles.
Audience: Both Grad & Undergrad

4. Explain approaches to researching social struggles via academic and popular sources.
Audience: Undergraduate

5. Demonstrate the basics of creating academic scholarship on social struggles in a geographic context.
Audience: Undergraduate

6. Produce academic scholarship on social struggles in a geographic context.
Audience: Graduate

7. Use radical pedagogy for guiding classroom discussions.
Audience: Graduate

8. Develop a personalized set of approaches to mediating challenging geographical and theoretical concepts for a broad range of learners.
Audience: Graduate

GEOG 302 – ECONOMIC GEOGRAPHY: LOCATIONAL BEHAVIOR
4 credits.

Classic location theory with modern extensions. Examination of theoretical statements and selected empirical examples. Principles of economic regionalization and network analysis with emphasis on spatial implications of the economic development process.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG/URB R PL 305 – INTRODUCTION TO THE CITY
3-4 credits.

Investigates urbanization as a general process, as well as the resulting contemporary physical, social, cultural and political- economic forms of cities. Emphasis will be placed on the history and current forms of spatial and social segregation of cities by race, class, ethnicity, and gender. The myriad ways that cities have addressed the tensions emerging from this history of spatial and social segregation will be highlighted. Further, emphasis will be placed on understanding the experiences of those most-affected by historical and continuing segregation.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Identify the largest factors influencing where, when, and how cities develop.
Audience: Undergraduate

2. Explain historical and contemporary patterns of social inclusion and exclusion in cities and identify and explain their underlying causes and effects.
Audience: Undergraduate

3. Apply lessons of the past to the puzzles of today's cities.
Audience: Undergraduate

4. Recognize and question assumptions about current city form, including racial segregation.
Audience: Undergraduate

5. Recognize and question assumptions about the experience of contemporary urban dwellers, particularly as these are shaped by race, class, and gender.
Audience: Undergraduate

6. Develop a consciousness of self and others.
Audience: Undergraduate

7. Participate effectively in a multicultural society by embracing your role as a citizen of Madison; valuing the positive aspects of American urban culture, including diversity in its many forms; and understanding cities as primarily social entities and problems of organized complexity.
Audience: Undergraduate

GEOG 307 – INTERNATIONAL MIGRATION, HEALTH, AND HUMAN RIGHTS
3 credits.

Provides an introduction to health and human mobility in a global context. Mobility is part of the human condition and international law enshrines freedom of movement, yet nation-states reserve the right to exclude. Examines the development of laws and institutions governing people on the move; how these solidify or reshape existing global, racial-ethnic, class, and gender hierarchies; and how they contribute to individual and population-level health.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Explain the principal economic, political, and social forces and government policies fueling international migration and attitudes toward it.
Audience: Undergraduate

2. Explain the principal economic, political, and social forces and government policies that create the conditions for protracted population displacements.
Audience: Undergraduate

3. Explain the principles of the structural determinants of health and life course frameworks.
Audience: Undergraduate

4. Apply the structural determinants of health framework to explain how governmental policies and practices shape international migrants' health
Audience: Undergraduate

GEOG/CHICLA/GEN&WS 308 – LATINX FEMINISMS: WOMEN'S LIVES, WORK, AND ACTIVISM
3 credits.

An examination of Latinx women's lives, experiences, and activism through the lens of testimonio, life histories, and feminist writings rooted in social justice movements and critical pedagogies.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Identify and describe key theoretical concepts and frameworks used in interdisciplinary studies of Latinas/xs and other women of color in the U.S.
Audience: Undergraduate

2. Explain the historical origins of Chicanx and Latinx feminisms and their relationship with social justice movements.
Audience: Undergraduate

3. Critically analyze the works of leading Latinx feminist scholars and theorists, who have written on issues of race, ethnicity, gender, LGBTQ identities, labor, color, citizenship status, and generation.
Audience: Undergraduate

4. Explore different writing genres and methodologies used in the study of women's lives, experiences, and activism.
Audience: Undergraduate

5. Apply the framework of testimonio to complete a digital storytelling project, examining a key theme or issue in women's lives.
Audience: Undergraduate

GEOG/ENVIR ST 309 – PEOPLE, LAND AND FOOD: COMPARATIVE STUDY OF AGRICULTURE SYSTEMS
3 credits.

Introduction to how and why humans have transformed natural landscapes around the world, including tropical deforestation. Exploration of different agricultural systems, and topics such as food security, land scarcity, bioenergy and the impacts of food production on the environment.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG/INTL ST 311 – THE GLOBAL GAME: SOCCER, POLITICS, AND IDENTITY
3-4 credits.

Soccer (or football) is played in almost every part of the world. Soccer will be used as a lens through which to think critically about a range of issues within our own societies and around the world. This includes examining the relationship between European imperialism and the globalization of soccer in the early 20th century; thinking about who gets to play (and who gets paid) across different contexts; and analyzing how soccer is both globally networked and intensely local in its passions and rivalries. Draws from a range of perspectives on soccer, from those who consider it to be an opium for the masses to those who see it as a vehicle for positive social change, in order to illuminate some of the big questions facing the world today.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Identify and describe the ways that soccer shapes societies and vice-versa.
Audience: Undergraduate

2. Demonstrate an understanding of different theoretical approaches to studying soccer.
Audience: Undergraduate

3. Analyze sites in which soccer can be a vehicle for contesting political and cultural injustices.
Audience: Undergraduate

4. Apply course insights to broader debates about globalization, identities, and inequalities.
Audience: Undergraduate

GEOG/INTL ST 315 – UNIVERSAL BASIC INCOME: THE POLITICS BEHIND A GLOBAL MOVEMENT
3 credits.

Should all individuals in society receive a regular transfer of cash from the state without any strings attached? If that question had been posed fifteen years ago, it would likely have been dismissed as unrealistic, undesirable, or just plain crazy. In recent years, however, the idea of introducing a universal basic income [UBI] has gained a lot of traction around the world. Growing inequalities, financial crises, fears about jobs being automated, and the COVID-19 pandemic have all helped to put UBI on the political map. But where did the idea come from? How is it traveling to different parts of the world? And on what grounds do different advocates justify their claims? Address these questions and more by exploring the history, philosophy, and political economy of UBI from a range of perspectives. Ongoing UBI experiments from different parts of the world will also be examined.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Describe the histories and philosophies that have shaped UBI claims.
Audience: Undergraduate

2. Differentiate UBI from other forms of social assistance.
Audience: Undergraduate

3. Compare and contrast different schools of thought regarding UBI.
Audience: Undergraduate

4. Evaluate evidence from recent and ongoing UBI experiments.
Audience: Undergraduate

5. Produce your own arguments about UBI.
Audience: Undergraduate

GEOG 318 – INTRODUCTION TO GEOPOLITICS
3 credits.

Introduction to the contemporary study of geopolitics, featuring the main concepts and research themes encountered in this field. Examine the formation of geopolitical images of the world, where these images come from, and how they have shaped our thinking and politics over time.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2022
Learning Outcomes: 1. Define and distinguish between traditional and critical approaches to geopolitics.
Audience: Both Grad & Undergrad

2. Discuss the main elements of the geopolitical imagination that shape our understanding of the world and our place in it.
Audience: Both Grad & Undergrad

3. Describe, provide examples of, and critically analyze the formal, practical, and popular geopolitics that interact to produce our geopolitical understandings of the world.
Audience: Both Grad & Undergrad

4. Trace the continuities and discontinuities of United States geopolitics across imperial, cold war, post-cold war, and post-9/11 eras.
Audience: Both Grad & Undergrad

5. Situate course themes in the larger contemporary critical geopolitics literature.
Audience: Graduate

GEOG/GEOSCI 320 – GEOMORPHOLOGY
3 credits.

Principles and analysis of geomorphic processes and resulting land forms.
Requisites: GEOSCI/ENVIR ST 106, GEOSCI 100, 109, 204, ENVIR ST/GEOG 120, 127 or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Recognize the processes that cause rivers to transport sediment.
Audience: Both Grad & Undergrad

2. Recognize the processes by which glaciers slip over or deform their beds and produce landforms.
Audience: Both Grad & Undergrad

3. Recognize the processes that govern hill slope stability.
Audience: Both Grad & Undergrad

4. Identify and explain the processes that govern the geomorphology of coastal regions.
Audience: Both Grad & Undergrad

5. Describe why parts of Wisconsin look the way they do.
Audience: Both Grad & Undergrad

6. Calculate glacier sliding speeds from glacier profiles.
Audience: Graduate

7. Calculate sediment transport by rivers.
Audience: Graduate

GEOG/ATM OCN/ENVIR ST 322 – POLAR REGIONS AND THEIR IMPORTANCE IN THE GLOBAL ENVIRONMENT
3 credits.

Reviews the past, present, and future of the Arctic and Antarctic regions. Covers the history, geography, atmospheric and ocean circulations, permafrost, ice sheets, glaciers, and future state of the Arctic and Antarctica as projected by earth system models. Also explores the role of the polar regions in the earth's system and associated global climatic feedbacks.
Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Describe the history, geography, atmospheric and ocean circulations, permafrost, ice sheets, glaciers, and the future state of the Arctic and Antarctic Regions.
Audience: Both Grad & Undergrad

2. Explain the major theories and concepts of the Arctic and Antarctic regions.
Audience: Both Grad & Undergrad

3. Identify how interactions occur between the major components of each polar region and their influence on global processes and climate.
Audience: Both Grad & Undergrad

4. Recognize the need for multi-disciplinary research to further our understanding of the polar regions and their role in the global system.
Audience: Both Grad & Undergrad

5. Integrate thesis or dissertation research directly or indirectly with polar processes research, thereby gaining better insight into Arctic and Antarctic regions.
Audience: Graduate

GEOG/ATM OCN/ENVIR ST 332 – GLOBAL WARMING: SCIENCE AND IMPACTS
3 credits.

Offers a fundamental understanding of how and why global warming is happening and what to expect in the future. Investigate and discuss the evidence for change, the science that explains these observations, predicted impacts on humans and ecosystems, and the societal debate over proposed solutions.
Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe the physical basis by which CO2 and other greenhouse gases control atmospheric temperatures.
Audience: Undergraduate

2. Explain the trends and drivers of historical and future climate change using a combination of observational data, climate model simulations, and hands-on exercises with a simple layer model.
Audience: Undergraduate

3. Summarize the global carbon cycle, its major reservoirs and fluxes, and the role of natural and anthropogenic processes.
Audience: Undergraduate

4. Apply concepts of climate feedbacks and climate sensitivity both qualitatively and quantitatively.
Audience: Undergraduate

5. Discuss and evaluate impacts of anthropogenic emissions on the physical climate system, ecosystems, and human development.
Audience: Undergraduate

6. Evaluate current and proposed strategies for climate mitigation, adaptation, and geoengineering.
Audience: Undergraduate

GEOG/ENVIR ST 333 – GREEN URBANISM
3 credits.

Over half of the world's population now lives in urban areas, with an expected increase of 2.5 billion people in the next 30 years. As urbanization (broadly defined as the conversion of previously undeveloped lands into urbanized uses) continues and intensifies, we are faced with a number of environmental issues, for instance, fragmentation and destruction of habitats, and decreased air and water quality. Explore how urbanization impacts ecological processes and resulting environmental outcomes, strategies for "designing with nature," and behavioral, planning, and policy responses to urban environmental problems.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe ecological processes as they relate to urbanization
Audience: Undergraduate

2. Describe the social, economic, and environmental dimensions of sustainable communities and identify potential trade-offs and interrelationships among these dimensions
Audience: Undergraduate

3. Analyze the causes of and solutions for the sustainability challenge of sustainable cities and communities
Audience: Undergraduate

4. Analyze local plans for sustainability strategies
Audience: Undergraduate

5. Identify strategies that cities can employ in preparing for the effects of the changing climate
Audience: Undergraduate

GEOG/ATM OCN/ENVIR ST/GEOSCI 335 – CLIMATIC ENVIRONMENTS OF THE PAST
3 credits.

Climate change at timescales from the last several million years to the last 100 years, with emphasis on more recent timescales. Examines how climate variability arises from interplay between external forcings, feedbacks within the earth system, and (more recently) human activity.
Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Describe the major climatic events and trends during the Quaternary, spanning timescales from the last 50,000,000 years to the last 100 years.
Audience: Undergraduate

2. Identify the physical processes controlling the behavior of the earth system and its components (atmosphere, oceans, cryosphere, biosphere, etc.).
Audience: Undergraduate

3. Discuss how climatic variability results from a combination of external forcings and internal dynamics within the earth system.
Audience: Undergraduate

4. Recognize how paleoclimatologists collect, date, and analyze a staggering variety of paleoclimatic records, including ocean and lake sediment cores, ice cores, tree rings, corals, and speleothems.
Audience: Undergraduate

5. Analyze and critically evaluate climate experiments that are simulated by earth system models.
Audience: Undergraduate

6. Think and write critically, with particular attention to critically reading the scientific literature and critically employing the climate proxies and models used by paleoclimatologists.
Audience: Undergraduate

GEOG/ENVIR ST 337 – NATURE, POWER AND SOCIETY
3 credits.

Explores the links between nature, power and society in today's world. Considers the complex relationships between humans and the earth's resources, including food, energy, physical materials, water, biota, and landscapes. Examines issues linked to population and scarcity, resource tenure, green consumerism, political economy, environmental ethics, risks and hazards, political ecology, and environmental justice.
Requisites: Sophomore standing. Not open to students with credit for ENVIR ST 112
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Describe key elements that link nature, power, and society.
Audience: Undergraduate

2. Explain the social, economic, and/or environmental dimensions of the sustainability challenges regarding a range of important policy issues with environmental and sustainability implications.
Audience: Undergraduate

3. Apply sustainability principles and/or frameworks to address the challenges associated with a range of development issues that have environmental implications.
Audience: Undergraduate

4. Analyze the causes of and solutions for sustainability challenges of various development policy decisions.
Audience: Undergraduate

GEOG/BOTANY 338 – ENVIRONMENTAL BIOGEOGRAPHY
3 credits.

Explores how physical and biological factors affect the distribution of terrestrial biomes, ecosystem types, and biodiversity, as well as the role of disturbance and recent human activities on differences in past and modern day species distributions.
Requisites: Sophomore standing
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Identify patterns and mechanisms of local to global gene, species, ecosystem and biome distributions.
Audience: Both Grad & Undergrad

2. Describe how past, current and future environmental change affect biogeography.
Audience: Both Grad & Undergrad

3. Explain how humans affect geographic patterns of biodiversity.
Audience: Both Grad & Undergrad

4. Discuss major paradigm changes in biogeography and how changes in conceptual frameworks and technology have altered interpretations of data and understanding of processes.
Audience: Both Grad & Undergrad

5. Apply concepts from biogeography to current environmental problems.
Audience: Both Grad & Undergrad

6. Explain how legacies of colonialism and scientific racism affect historical and current biases in the representation, methods, practice, and applications of biogeography.
Audience: Both Grad & Undergrad

7. Discuss and critique the primary literature (scientific articles in peer-reviewed journals) in biogeography.
Audience: Both Grad & Undergrad

8. Identify a controversy in biogeography and state the problem, trace its origins in the literature, provide arguments on opposing sides from the peer-reviewed literature, and what implications it has on current thinking and practice in conservation or sustainable use.
Audience: Graduate

GEOG/ENVIR ST 339 – ENVIRONMENTAL CONSERVATION
4 credits.

Examines major environmental conservation approaches in the U.S. and developing countries and how they are influenced by sociopolitical factors, cultural values and scientific understandings of nature. Historical and contemporary cases are explored with emphasis on biodiversity and climate change issues.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe the role of values, ecology, and institutions in shaping environmental threats and conservation strategies.
Audience: Both Grad & Undergrad

2. Analyze the history of conservation thought and action in the United States.
Audience: Both Grad & Undergrad

3. Recognize the major categories of federal land in the U.S., their environmental importance, and controversies, as well as the roots of wildlife management in the U.S. and current factors associated with public support or opposition to hunting.
Audience: Both Grad & Undergrad

4. Examine the uneven distribution of environmental harms both globally and within the U.S. and how this is affected by race, class, and geography.
Audience: Both Grad & Undergrad

5. Explain the urgency of environmental justice.
Audience: Both Grad & Undergrad

6. Evaluate the strengths and limits of rule-based and incentive-based conservation programs.
Audience: Both Grad & Undergrad

7. Recognize the key challenges and opportunities for biodiversity conservation in the tropics.
Audience: Both Grad & Undergrad

8. Produce an actionable analysis of an environmental issue of interest to the graduate student that integrates the social and biophysical dimensions of the environmental issue.
Audience: Graduate

GEOG 340 – WORLD REGIONS IN GLOBAL CONTEXT
3 credits.

Survey of development and change within each of the world's regions (e.g., Africa, Southeast Asia). Attention devoted to environment and society; history, economy, and demographic change; culture and politics; future challenges; key actors.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe geographic characteristics of world regions using multiple forms of knowledge (e.g., Sub-Saharan Africa, Southeast Asia).
Audience: Both Grad & Undergrad

2. Discuss how travel and fieldwork can generate unique insights about world regions.
Audience: Both Grad & Undergrad

3. Describe four major geographic concepts about world regions: identity, diversity, uneven development, and global interdependencies. (
Audience: Both Grad & Undergrad

4. Describe within each world region key features of environment and society; history, economy and demographic change; and culture and politics.
Audience: Both Grad & Undergrad

5. Compare and contrast each world region and identify the advantages and limitations of a regional approach to understanding the world.
Audience: Both Grad & Undergrad

6. Analyze the concept of “region” and determine how and when it is valid.
Audience: Graduate

GEOG 342 – GEOGRAPHY OF WISCONSIN
3 credits.

Overview of the physical and human geography of Wisconsin, with an emphasis on the physical, historical, and cultural processes that shaped the Badger State.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Explain at a basic level the processes that shaped the physical geography of the state, including its bedrock geology, glacial landforms, soils, and natural plant communities.
Audience: Undergraduate

2. Characterize the past and present physical geography of particular places within the state using key information sources, including public land survey records and web-based soil surveys.
Audience: Undergraduate

3. Explain at a basic level how the cultural geography of Wisconsin reflects the Native Nations that have lived in this place for many thousands of years, the expropriation of their lands in the 19th and 20th centuries, and the new communities and cultural landscapes created by immigrant settlers.
Audience: Undergraduate

4. Recognize distinctive characteristics of Wisconsin’s rural geography, including dairy farming and other kinds of agriculture that developed here, the history of logging and the cutover lands, and emergence of tourism and the conservation movement.
Audience: Undergraduate

5. Use key information resources on rural geography, such as General Land Office records and first-hand accounts of Native American and immigrant communities.
Audience: Undergraduate

6. Explain at a basic level the historical development and present-day spatial structures of Wisconsin cities, especially the geography of industrial development, racism, and segregation in the Milwaukee metropolitan area.

Audience: Undergraduate

GEOG 344 – CHANGING LANDSCAPES OF THE AMERICAN WEST
3 credits.

Environmental change in the landscapes of the American West, in the recent past, present, and future, from the physical science background to human-environment interactions.
Requisites: Sophomore standing
Course Designation: Breadth - Either Social Science or Natural Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Explain at a basic level the distinctive landforms and other features of major regions of the American West.
Audience: Both Grad & Undergrad

2. Describe at a basic level current scientific perspectives on the mechanisms and causes of recent and future changes in vegetation, fire regimes, and hydrology of the American West.
Audience: Both Grad & Undergrad

3. Use and critically evaluate key information resources to characterize the environments of the recent past and change since then, from first-hand accounts by Native peoples of the West to General Land Office records and historical or modern images.
Audience: Both Grad & Undergrad

4. Critically evaluate news reporting and advocacy of popular media on environmental change in the American West.
Audience: Both Grad & Undergrad

5. Critically analyze debates on the environmental impacts of major land uses in the American West, such as irrigated agriculture, outdoor recreation, forest products production, and livestock grazing, taking into account the economic, cultural, and political interests and perspectives of the various sides in each debate.
Audience: Both Grad & Undergrad

6. Develop an in-depth understanding of recent scientific research or public advocacy/activism on one specific aspect of environmental change in the American West.
Audience: Graduate

7. Present explanations of issues of environmental change at the level of an intermediate undergraduate class.
Audience: Graduate

GEOG/AMER IND/ENVIR ST 345 – CARING FOR NATURE IN NATIVE NORTH AMERICA
3 credits.

Surveys the concepts, practices, and issues associated with caring for nature in American Indian communities.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2024
Learning Outcomes: 1. Interpret the diverse arrangements for tribal sovereignty, indigenous landtenure, and claims to natural resources and the environment.
Audience: Undergraduate

2. Illustrate natural resource and environmental issues important to bothAmerican Indians and Wisconsin Indians.
Audience: Undergraduate

3. Identify similarities and differences between indigenous knowledge systemsand Western Science.
Audience: Undergraduate

4. Discuss the marked cultural and natural diversity across native NorthAmerica.
Audience: Undergraduate

5. Recall the many different conceptions of place, nature, and development innative North America.
Audience: Undergraduate

6. Describe the diversity of American Indian experiences and their variedresponses to assorted histories of exclusion and marginalization.
Audience: Undergraduate

7. Demonstrate an awareness of history's impact on the present.
Audience: Undergraduate

GEOG 355 – AFRICA, SOUTH OF THE SAHARA
3 credits.

Physical and human distributions and interrelationships, with emphasis on the spatial processes and patterns of modernization.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2023
Learning Outcomes: 1. Describe the variation of biophysical characteristics across the continent (geology, soils, landforms, rivers, ecology) and how these characteristics influence rural livelihood practices and the economic history of the continent.
Audience: Undergraduate

2. Identify features (and variations in) of African social organization and current dynamics of change.
Audience: Undergraduate

3. Discuss the social and political history of the continent and current political and economic challenges facing African nations.
Audience: Undergraduate

4. Explain major development challenges (including human health) and different approaches for addressing them.
Audience: Undergraduate

GEOG 358 – HUMAN GEOGRAPHY OF SOUTHEAST ASIA
3 credits.

Introduction to the human geography and history of Southeast Asia, including important political and theoretical issues and policies and positionings of relevance for understanding the spatiality of the region, including the ways that ethnicity and indigeneity are playing out in Southeast Asia and among Southeast Asians in the United States.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe ethnic diversity and ethnic politics in Southeast Asia
Audience: Both Grad & Undergrad

2. Explain transnational and transcultural politics in the United States as they relate to Southeast Asia, especially associated with the Hmong and Lao, but also other groups as well.
Audience: Both Grad & Undergrad

3. Describe key human geographic patterns in Southeast Asia.
Audience: Both Grad & Undergrad

4. Apply knowledge of ethnic diversity and political issues in Southeast Asia when conducting research.
Audience: Graduate

GEOG 359 – AUSTRALIA: ENVIRONMENT AND SOCIETY
3 credits.

An introduction to the human and environmental geography of Australia, including Australian geology, ecology, society, and culture. Topics include analysis of current events in Australia and current resource management problems using Google Earth and other tools. Australia is a settler country, the scene of indigenous genocide, a former English colony, a mythical unknown, a biophysical puzzle, home to a startling diversity of life, a cradle of modern democracy, and a powerful industrial economy with a rich resource base. It thus serves in many ways as a mirror for the US - even matching the US roughly in size, if not in population. The two countries share many elements of a common history and biogeography and yet the human and environmental geographies of the two countries have traced very different paths into the modern world.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2023

GEOG 365 – GEOGRAPHICAL TRADITIONS AND PRACTICES
3 credits.

An introduction to the breadth and practice of Geography. Introduces geographic perspectives, theories, themes, and research design. Covers the history of the discipline, applied quantitative and qualitative methodologies used in geographic research, and a selection of subfields within the discipline.
Requisites: Declared in Geography or Cartography and Geographic Information Systems undergraduate programs
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Identify and describe careers that are relevant to geographers
Audience: Undergraduate

2. Identify learning and research resources available through the Department of Geography
Audience: Undergraduate

3. Describe and apply key definitions, methods, data sets, and theories commonly used in Geography
Audience: Undergraduate

GEOG 370 – INTRODUCTION TO CARTOGRAPHY
4 credits.

A broad introduction to cartography emphasizing the theory and practice of map-making. Topics include the basics in mapping (e.g., scale, spatial reference systems, projections), data acquisition, key techniques for thematic mapping, and principles of cartographic abstraction and design.
Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Design maps with the best and current cartographic principles in mind.
Audience: Both Grad & Undergrad

2. Execute original map designs from conceptualization to delivery while estimating and managing the time needed for an open-ended design project.
Audience: Both Grad & Undergrad

3. Design maps within client-defined constraints.
Audience: Both Grad & Undergrad

4. Acquire and prepare geographic datasets.
Audience: Both Grad & Undergrad

5. Follow and deviate from a cartographic workflow using contemporary cartography and GIS software.
Audience: Both Grad & Undergrad

6. Discuss cartographic design within its broader historical and social contexts.
Audience: Both Grad & Undergrad

7. Provide constructive feedback for peers and self during the process of design.
Audience: Both Grad & Undergrad

8. Place design principles within the contemporary cartographic literature.

Audience: Graduate

GEOG/ENVIR ST/G L E/GEOSCI/LAND ARC 371 — INTRODUCTION TO ENVIRONMENTAL REMOTE SENSING
3 credits.

Introduction to the Earth as viewed from above, focusing on use of aerial photography and satellite imagery to study the environment. Includes physical processes of electromagnetic radiation, data types and sensing capabilities, methods for interpretation, analysis and mapping, and applications.
Requisites: (Sophomore standing and MATH 113, 114, or 171), graduate/professional standing, or member of Engineering Guest Students
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Demonstrate understanding of major theories, approaches, concepts, and methods in remote sensing science.
Audience: Undergraduate

2. Apply knowledge of the nature and properties of electromagnetic radiation and how it is affected by interactions with the atmosphere and the Earth's surface.
Audience: Undergraduate

3. Utilize the techniques, skills, and modern tools necessary for monitoring environmental phenomena with earth observation data.
Audience: Undergraduate

4. Know and effectively apply image analysis, data extraction, and map-making using earth observation data.
Audience: Undergraduate

5. Demonstrate how to analyze remote sensing data using photo-interpretation, digital image processing, and photogrammetric techniques using specialized software, within geographic information systems (GIS), and in conjunction with other data sources.
Audience: Undergraduate

6. Demonstrate how to perform classification, change detection, data fusion, and radiometric and geometric correction techniques.
Audience: Undergraduate

7. Identify and appropriately utilize data types from the optical, thermal, and microwave portions of the electromagnetic spectrum, and from a wide range of airborne and satellite platforms, including high (>5 m), medium (10-30 m), and coarse (250-1000 m) spatial resolution imagery.
Audience: Undergraduate

8. Demonstrate knowledge about environmental applications of remote sensing data, such as forest inventory, water resource management, agricultural assessment, land use planning, and global change science.
Audience: Undergraduate

9. Write clear and concise laboratory reports (in scientific format) describing analytical results from image classification and change detection experiments.
Audience: Undergraduate

10. Communicate effectively through discussion, small group work, hands-on lab activities, and written reports.
Audience: Undergraduate

GEOG/CIV ENGR/ENVIR ST 377 — AN INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS
4 credits.

Design, implementation and use of automated procedures for storage, analysis and display of spatial information. Covers data bases, information manipulation and display techniques, software systems and management issues. Case studies.
Requisites: Sophomore standing, member of Engineering Guest Students, or declared in Capstone Certificate in GIS Fundamentals
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe the basic structures, concepts, and theories of GIS.
Audience: Both Grad & Undergrad

2. Conduct daily routines of GIS operations.
Audience: Both Grad & Undergrad

3. Make connections to the broader literature in GIS
Audience: Graduate

GEOG 378 – INTRODUCTION TO GEOCOMPUTING
4 credits.

Introduction to scripting for Geographic Information Science. Geoprocessing with open-source GIS utilities. Python scripting with ArcGIS and open-source libraries.
Requisites: CIV ENGR/ENVIR ST/GEOG 377 or concurrent enrollment, or graduate/professional standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Write shell commands to accomplish common (batch)geoprocessing tasks using popular open-source utility programs, and identify when these utilities are preferred over mainstream GIS software.
Audience: Both Grad & Undergrad

2. Develop basic skills in the Python programming language and programming concepts necessary for advanced GIS courses that require programming.
Audience: Both Grad & Undergrad

3. Use Python with open-source GIS libraries regardless of the Integrated Development Environment (IDE).
Audience: Both Grad & Undergrad

4. Demonstrate how Python can extend the capabilities of ArcGIS to solve problems difficult or impossible to address otherwise.
Audience: Both Grad & Undergrad

5. Describe major geospatial vector and raster file formats and specifications for spatial reference coordinate systems.
Audience: Both Grad & Undergrad

6. Identify online resources that support geocomputing and programming in the GIS profession.
Audience: Both Grad & Undergrad

7. Utilize newly developed GIS computation tools/libraries and platforms
Audience: Graduate

GEOG 379 – GEOSPATIAL TECHNOLOGIES: DRONES, SENSORS, AND APPLICATIONS
3 credits.

Introduction to state-of-the-art technologies that capture properties of the landscape, which is critical to better characterize and understand environmental properties and change. Develop skills in geospatial systems applicable to a variety of research and industry fields. Includes an overview of unmanned aerial systems (drones), light detection and ranging (LiDAR), high-grade Differential GPS (DGPS), Global Navigation Satellite Systems (GNSS), virtual reality, optical sensors, geocaching, and geotagging.
Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Identify Unmanned Aerial Systems hardware, safety, regulations, mission planning, and applications for the sciences.
Audience: Both Grad & Undergrad

2. Develop skills in the area of structure-from-motion 3D point cloud model development and visualization.
Audience: Both Grad & Undergrad

3. Identify and use high-grade differential Geographic Positioning Systems and Global Navigation Satellite Systems.
Audience: Both Grad & Undergrad

4. Develop proficiency in LiDAR technologies from satellite, airborne, Unmanned Aerial Systems, and terrestrial, including LiDAR data collection, visualization, and processing.
Audience: Both Grad & Undergrad

5. Use remote sensing instruments, such as multispectral and hyperspectral sensors and thermal cameras.
Audience: Both Grad & Undergrad

6. Become familiar with Virtual reality, augmented reality, geocaching and geotagging.
Audience: Both Grad & Undergrad

7. Apply geospatial technology data collection and processing to research.

Audience: Graduate

GEOG 399 – INDEPENDENT STUDY
1-3 credits.

Study under direct guidance of a faculty member. Appropriate for initial exploration of an area of scholarship in Geography through laboratory, field, or literary study.
Requisites: Consent of instructor
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No

GEOG/AMER IND 410 – CRITICAL INDIGENOUS ECOLOGICAL KNOWLEDGES
3 credits.

Critical Indigenous Ecological Knowledges are a set of diverse understandings, responsibilities, and laws held by distinct groups of Indigenous peoples that are enacted in multiple ways across socio-political and geographical contexts. These knowledges intersect with Indigenous political sovereignties and longstanding, complex, and nuanced relationships to the more-than-human world. Learn multiple entry points to exploring and examining these knowledge sets in the context of what's for now called the U.S. and Canada to think critically about the politics of Nature, environmentalism, race, indigeneity, and colonialism both historically and in the contemporary moment. Reflect upon how critical Indigenous knowledges about ecology, environment, and government have been erased, co-opted, criminalized, and also continually practiced, reimagined, and revitalized in multiple spheres through a range of interdisciplinary, critical, and cutting-edge Native scholarships and writings.
Requisites: Junior standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2022
Learning Outcomes: 1. Gain understandings of the diversity of Ecological Thought among Native peoples across the U.S. and Canada.
Audience: Both Grad & Undergrad

2. Gain understanding of the intersections between Critical Indigenous Ecological Knowledges and Indigenous Sovereignty.
Audience: Both Grad & Undergrad

3. Identify forces of colonialism that have negatively shaped access to and continuation of Ecological Knowledges in Native communities both historically and in ongoing forms.
Audience: Both Grad & Undergrad

4. Identify and gain understanding of the ongoing practices of Indigenous Ecological Knowledges that have persisted against colonialism.
Audience: Both Grad & Undergrad

5. Identify and gain understanding of practices of revitalization that Native peoples practice to reestablish and reimagine relationships with their knowledges, languages, and lands
Audience: Both Grad & Undergrad

6. Engage and demonstrate knowledge with the latest and most cutting edge literature in the discipline of Native American and Indigenous Studies.
Audience: Graduate

7. Gain an ability to analyze and synthesize the political, philosophical, and analytical import of Native American and Indigenous Studies, especially in the context relating to Critical Indigenous Ecological Knowledges.
Audience: Graduate

GEOG/GEOSCI 420 – GLACIAL AND PLEISTOCENE GEOLOGY
3 credits.

Principles, characteristics and work of glaciers; events of the Pleistocene. Field trip.
Requisites: GEOSCI/ENVIR ST 106, GEOSCI 100, 109, ENVIR ST/GEOG 120, 127, or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Explain the processes that cause ice deformation in a glacier.
Audience: Both Grad & Undergrad

2. Explain the processes by which glaciers slip over or deform their beds.
Audience: Both Grad & Undergrad

3. Identify subglacially and proglacially derived landforms and explain the processes that produce them.
Audience: Both Grad & Undergrad

4. Explain in general terms the history of ice advance during the later stages of the Pleistocene and the effects it had on glacial geomorphic record.
Audience: Both Grad & Undergrad

5. Assess how climate affected glacial processes.
Audience: Both Grad & Undergrad

6. Describe why glaciated parts of Wisconsin look the way they do.
Audience: Both Grad & Undergrad

7. Interpret glacial features and deposits while in the field.
Audience: Graduate

GEOG/C&E SOC/ENVIR ST 434 – PEOPLE, WILDLIFE AND LANDSCAPES
3 credits.

Explores the relationship between humans and wildlife amid diverse landscapes, both historic and contemporary, tropical and temperate. Investigates how humans shape wild animal populations by modifying physical environments, and by hunting, domesticating and introducing species.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Compare and evaluate the three types of social research in terms of how they engage with biodiversity conservation.
Audience: Both Grad & Undergrad

2. Differentiate attitudes, values and norms and explain why sociologists suggest norm change is the best path to changing human environmental behavior.
Audience: Both Grad & Undergrad

3. Analyze shifts in attitudes to wildlife among the public in the U.S. and in Global South settings.
Audience: Both Grad & Undergrad

4. Analyze the social and political factors shaping popular explanations for wildlife decline and human-wildlife conflict.
Audience: Both Grad & Undergrad

5. Organize evidence to guide policy makers how to reduce wildlife loss or how to resolve conflicts with wildlife including invasive species.
Audience: Both Grad & Undergrad

6. Improve professional writing and speaking skills.
Audience: Both Grad & Undergrad

7. Practice measuring attitudes toward wildlife.
Audience: Graduate

GEOG/ENVIR ST 439 – US ENVIRONMENTAL POLICY AND REGULATION
3-4 credits.

Covers a broad cross-section of American environmental policy by focusing on specific statutes and policy arenas. Surveys the basic elements of American environmental policy and regulation with a particular focus on the specific people, sites and scales at which environmental decision-making happens through primary-source case material. Maintains a dual focus on (a) the legal and regulatory aspects of environmental regulation and (b) the specific geographic and social features of actual cases in which regulations and policy are used. Understanding environmental outcomes in a complex society depends on observing both the structure of regulations and the geographic and social context in which such regulations emerge.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. dentify the spectrum of major U.S. environmental regulations, including the Clean Water Act, the Clean Air Act, the Endangered Species Act, CERCLA, and regulations involving environmental justice, climate change, and market environmentalism.
Audience: Both Grad & Undergrad

2. Discuss the specialized language of environmental policy and regulation.
Audience: Both Grad & Undergrad

3. Identify, through current case material, how these policies manifest in our daily interactions with the environment and government.
Audience: Both Grad & Undergrad

4. Describe the social and environmental background to each policy debate using critical and geographic viewpoints often adopted by social scientists.
Audience: Both Grad & Undergrad

5. Write long-form reports synthesizing regulatory issues with reportage on a major environmental policy issue.
Audience: Graduate

GEOG/ENVIR ST/HISTORY 460 – AMERICAN ENVIRONMENTAL HISTORY
4 credits.

Survey of interactions among people and natural environments from before European colonization to present. Equal attention to problems of ecological change, human ideas, and uses of nature and history of conservation and environmental public policy.
Requisites: Sophomore standing or 3 credits in HISTORY, GEOG or ENVIR ST
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Discuss the basic questions posed by environmental history as a field and method for doing historical scholarship.
Audience: Both Grad & Undergrad

2. Evaluate the continuities and shifts between environmental politics, in relation to social and economic and racial formations and material conditions in U.S. history.
Audience: Both Grad & Undergrad

3. Communicate effectively about the relevance of the past to the environmental present through argumentative writing.
Audience: Both Grad & Undergrad

4. Assess foundational work in the historiography on environmental history.
Audience: Graduate

GEOG 475 – TOPICS IN GEOGRAPHY
1-4 credits.

Explores emerging topics in Geography.
Requisites: Sophomore standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG 500 – QUALITATIVE STRATEGIES IN GEOGRAPHY
3 credits.

Surveys qualitative research and methods in geography, including the human subjects review process, research ethics, preparing for fieldwork, participant observation, interviewing, focus groups, filmic experiences, archival research, participatory action research, analyzing field materials and writing styles in qualitative research.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Implement different qualitative methods in research.
Audience: Both Grad & Undergrad

2. Identify different options for doing qualitative research.
Audience: Both Grad & Undergrad

3. Discuss what methods are appropriate for different circumstances and how to do research using these qualitative methods.
Audience: Both Grad & Undergrad

4. Identify best practices in qualitative research.
Audience: Graduate

GEOG 501 – SPACE AND PLACE: A GEOGRAPHY OF EXPERIENCE
3 credits.

Explore the concepts of space and place from the perspective of learning and everyday experience. Examines how space and place emerge out of fundamental human needs, experiences, and ways of thinking.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2022

GEOG/URB R PL 503 – RESEARCHING THE CITY: QUALITATIVE STRATEGIES
3 credits.

Explores, and applies, qualitative methods in the field of urban geography. An introduction to debates around the analysis and interpretation of qualitative data is provided, grounded in concrete urban research. Participation in a three-day field course is required.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2020

GEOG/GEN&WS 504 – FEMINIST GEOGRAPHY: THEORETICAL APPROACHES
3 credits.

Provides an opening to some of the key debates and practices in feminist (political) geography. Feminist geography focuses on questions of power, difference, embodiment, and social change. How are feminist geographies in conversation with or part of other fields of inquiry, such as critical ethnic studies and Indigenous studies, which also focus on questions of difference, epistemologies of knowledge, and social transformation and/or decolonization? That is, what are the relationships of feminist geographic inquiry to liberatory projects of ending racism, capitalism, settler colonialism, and heteropatriarchy. Explore how feminist theories and approaches in geography transformed prevailing political geographic questions and concerns, such as power, politics, territory, boundaries, sovereignty, and violence. What do feminist principles and debates over feminist politics and methods bring to (political) geography?
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2024
Learning Outcomes: 1. Describe the major trajectories of feminist perspectives in (political) geography.
Audience: Both Grad & Undergrad

2. Gain the ability to discuss some of the relationships between feminist geography and broader feminist inquiry and politics.
Audience: Both Grad & Undergrad

3. Gain the ability to develop feminist questions for research and/or action relevant to your project.
Audience: Both Grad & Undergrad

4. Explain the relevance of feminist theory, methods, and/or practice to your project.
Audience: Both Grad & Undergrad

5. Explore how issues of difference and positionality inform your project and study of geography.
Audience: Both Grad & Undergrad

6. Articulate key debates over feminist (geographic) theory for your field and directions these debates suggest for your thesis or dissertation research.
Audience: Graduate

GEOG/URB R PL 505 – URBAN SPATIAL PATTERNS AND THEORIES
3 credits.

Various urban empirical regularities and theories which explain them.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025

GEOG 507 – WASTE GEOGRAPHIES: POLITICS, PEOPLE, AND INFRASTRUCTURES
3 credits.

Explores waste as discarded material, a polluting and threatening substance that must be managed, and as a political object. Waste's distribution across space and among groups of people, as well as the reasons for the effects of that distribution, will be examined using geographic perspectives. Who has the ability to avoid or remove themselves from waste? Who must live and work with it? The concept of infrastructure as a set of material things (roads, trucks, boats); laws and regulations; labor relations; and economies of disposal and consumption determining waste flows unites disparate topics and case studies across the semester. Concepts of and social movements for environmental justice are recurring themes.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Learning Outcomes: 1. Define waste as a political object and contrast this definition to popular, technical, and/or managerial definitions.
Audience: Both Grad & Undergrad

2. Apply new social-science definitions of infrastructure to waste geographies.
Audience: Both Grad & Undergrad

3. Appraise their own role(s) in various waste geographies and describe waste's ubiquity.
Audience: Both Grad & Undergrad

4. Explain the factors that produce uneven waste geographies, including the roles class, gender, and race play in personal and professional proximity to and distance from wastes of all kinds.
Audience: Both Grad & Undergrad

5. Make connections between, on the one hand, how problems having to do with waste are defined and, on the other hand, proposed solutions to 'the waste problem'.
Audience: Both Grad & Undergrad

6. Apply the lessons garnered from waste geographies to their research and disciplinary specialties.
Audience: Graduate

7. Synthesize major course concepts to frame novel and innovative research questions about waste geographies.
Audience: Graduate

8. Communicate complex conceptual arguments clearly and relate them to case studies.
Audience: Graduate

9. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of waste and waste management.
Audience: Both Grad & Undergrad

10. Describe the social, economic, and environmental dimensions of recycling and other waste reduction/management strategies and identify potential trade-offs and interrelationships among these dimensions at a level appropriate to the course.
Audience: Both Grad & Undergrad

GEOG 510 – ECONOMIC GEOGRAPHY
4 credits.

Theoretical aspects of spatial economic distributions and locational analysis.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe the logics underpinning economic growth. (
Audience: Both Grad & Undergrad

2. Explain the main critiques that have been made of economic growth.
Audience: Both Grad & Undergrad

3. Evaluate alternatives to economic growth that have emerged.
Audience: Both Grad & Undergrad

4. Examine degrowth experiments in different contexts.
Audience: Both Grad & Undergrad

5. Apply these insights to your own life and community.
Audience: Both Grad & Undergrad

6. Place these debates within the wider economic geography literature.
Audience: Graduate

GEOG 511 – CRITICAL SOCIAL THEORY
3 credits.

An introduction to many key movements and thinkers within Critical Social Theory. Explores the changing histories and presents of the field through a range of primary works from philosophy, critical theory, and geography - paying particular attention to the points where social theory intersects with problems of space and place. Covers classic problems in social theory ranging from theories of the political-economic constitution of the social (Marxism) and its extensions into the culture (the Frankfurt School) to a range of mid- to late-twentieth-century epistemological interventions framed around questions of difference and identity. Recent contestations and reformulations that have surfaced across ontological, decolonial, non-human, algorithmic, and other reimaginings and extensions of the social are examined.
Requisites: Junior standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Describe the history of and key perspectives in Critical Social Theory.
Audience: Undergraduate

2. Read and research theoretical scholarship.
Audience: Undergraduate

3. Identify effective strategies for developing and conducting theory-driven research.
Audience: Undergraduate

4. Explain approaches to researching socio-spatial topics.
Audience: Undergraduate

5. Write and edit academic theoretical research.
Audience: Undergraduate

6. Describe the nuances of the key debates in Critical Social Theory.
Audience: Graduate

7. Identify the key issues in recent socio-spatial theory and the implications for, refractions through, and/or reactions by broader contemporary intellectual movements.
Audience: Graduate

8. Design and complete theoretical/critical scholarship.
Audience: Graduate

9. Guide classroom discussions.
Audience: Graduate

10. Develop a personalized set of approaches to mediating challenging geographical, critical and theoretical concepts for a broad range of learners.
Audience: Graduate

GEOG 513 – QUEER GEOGRAPHIES
3 credits.

Explores several key events, sites, thinkers, and texts that contribute to the social, personal, and intellectual landscapes of Queer Geographies. An invitation to survey and reflect on queer critical strategies that sample, record, and remix constellations of relationships between theory, space, sexuality, gender, and identity. It foregrounds modes of queer spacing and placemaking in academic and popular works devoted to queer lives, studies, sexualities, narratives, publics and privates, joys and griefs, art, theory, and beyond. Offers a range of strategies for reading, interpreting, and developing nuanced scholarly interventions and theories. Question and reimagine normative notions of the personal, the social, and the socio-spatial.
Requisites: Junior standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Learning Outcomes: 1. Describe the history of and key perspectives and debates in Queer Studies and Queer Theory.
Audience: Both Grad & Undergrad

2. Read and research theoretical scholarship.
Audience: Undergraduate

3. Describe strategies for developing and conducting theory-driven research.
Audience: Undergraduate

4. Identify approaches to researching socio-spatial topics.
Audience: Undergraduate

5. Compose and edit academic theoretical/critical scholarship.
Audience: Both Grad & Undergrad

6. Recall the key issues in recent socio-spatial theory and the implications for, refractions through, and/or reactions by broader contemporary intellectual movements.
Audience: Graduate

7. Identify pedagogical strategies for guiding classroom discussions.
Audience: Graduate

8. Develop a personalized set of approaches to mediating challenging geographical, critical, and theoretical concepts for a broad range of learners.
Audience: Graduate

GEOG/GEN&WS 514 – FEMINIST GEOGRAPHY: METHODOLOGICAL APPROACHES
3 credits.

An introduction to foundational approaches to feminist qualitative research in human geography. Research is not separate from a social world that historically has been and continues to be shaped by (settler) colonial, racialized, gendered, sexualized, and class-inflected relations of power (among others). Research practices and "findings" have been and continue to be used to inform and rationalize relations of oppression, exploitation, and violence. For feminist researchers, then, questions of power, difference, and social change are central to how we design and conduct research. Engages in political-ethical discussions about the positionality and responsibilities of ourselves as researchers, and how our knowledge production can reproduce and challenge prevailing relations of power.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Discuss the interplay between epistemology and methodology.
Audience: Undergraduate

2. Explain clearly how their epistemological positions inform their methodological decisions.
Audience: Graduate

3. Discuss the political dynamics shaping knowledge production, and how feminist, decolonial, and anti-racist projects have reshaped these dynamics.
Audience: Both Grad & Undergrad

4. Discuss the historical constructions of 'the field,' and how feminist critiques and research practices challenge expectations regarding field work experiences.
Audience: Both Grad & Undergrad

5. Discuss how feminist research ethics extend researchers' ethical obligations of beneficence, respect for research subjects, and justice (Belmont Report).
Audience: Both Grad & Undergrad

6. Evaluate the virtues, dilemmas, and limitations of common qualitative methods.
Audience: Both Grad & Undergrad

7. Develop a compelling rationalization for research questions and methodologies (design) for your qualitative project.
Audience: Undergraduate

8. Articulate how feminist principles influence your research questions and methodologies.
Audience: Graduate

9. Explain how social positionality shapes the research process, and develop a practice of self-reflexivity.
Audience: Both Grad & Undergrad

GEOG 515 – TRANS AUTOTHEORIES
3 credits.

Offers an in-depth examination of trans lives, selves, and ways of knowing. Focuses on the trans "I" as it appears in autobiography, memoir, theory, performance, visual arts, music, spacing, place making, zines, and vlogs. These works ask how styles of self-making ("auto") might lead to new and changing conceptions of trans lives, worlds, and social formations ("theory"). The trans artists and writers explored fashion selves into prisms to fracture, negotiate, meditate upon, think, and re/present the encounters, becomings, transitions, and enframings that constitute trans existence. This "auto-theoretical" strategy reimagines genre, style, space, and media to create launching points for new trans aesthetics, theories, joys, and struggles. The polyphonic voices of these trans selves, taken together, bring a trans "we" into view, creating a discursive trans space made material.
Requisites: Junior standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2024
Learning Outcomes: 1. Explain the history of and critical perspectives in Trans Studies/Theory.
Audience: Undergraduate

2. Read and research theoretical scholarship.
Audience: Undergraduate

3. Identify practical strategies for developing and conducting theory-driven research.
Audience: Undergraduate

4. Describe approaches to researching socio-spatial topics.
Audience: Undergraduate

5. Demonstrate the basics of writing and editing academic theoretical research.
Audience: Undergraduate

6. Recall the key debates in Trans Studies/Theory.
Audience: Graduate

7. Identify critical issues in recent socio-spatial theory and the implications for, refractions through, and/or reactions by broader contemporary intellectual movements.
Audience: Graduate

8. Design and complete theoretical, critical scholarship.
Audience: Graduate

9. Describe pedagogical strategies for guiding classroom discussions.
Audience: Graduate

10. Develop personalized set of approaches to mediating challenging geographical, critical, and theoretical concepts for a broad range of learners.
Audience: Graduate

GEOG 518 – POWER, PLACE, IDENTITY
3 credits.

Advanced political geography course that explores reconceptualizations of power, place, and identity, as well as the interactive forces at work that continually reshape place-making and the inter-related processes of identification and differentiation.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Analyze current conceptualizations of power, place, identity, and difference, particularly those from geographers.
Audience: Both Grad & Undergrad

2. Evaluate major trends, themes, and approaches that have emerged in the field of political geography, especially as they are related to geographies of identification and differentiation.
Audience: Both Grad & Undergrad

3. Employ a performative approach in understanding processes of place-making, bordering, and identification/differentiation.
Audience: Both Grad & Undergrad

4. Identify theoretical debates in the political geography literature.
Audience: Both Grad & Undergrad

5. Discuss major themes and approaches related to questions of power, place, identity, difference, and nationalism.
Audience: Both Grad & Undergrad

6. Identify research questions related to course themes in ways that are responsive to major debates in the literature.
Audience: Graduate

GEOG 523 – ADVANCED PALEOECOLOGY: SPECIES RESPONSES TO PAST ENVIRONMENTAL CHANGE
3 credits.

Geographic and temporal responses of plant species and terrestrial ecosystems to the major environmental changes of the last 1,000,000 to 1,000 years, particularly glacial-interglacial changes in climate, carbon dioxide, and the end-Pleistocene extinctions of large animals. Key concepts include novel and no-analog ecosystems, abrupt climate and ecological change, and megaherbivore-vegetation interactions. This time period is of direct interest to global change ecologists and biogeographers studying species responses to 21st-century climate change. Hands-on practice emphasizes multivariate data analysis and quantitative paleoecological inference.
Requisites: Junior standing
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2022
Learning Outcomes: 1. Critically evaluate the primary literature.
Audience: Both Grad & Undergrad

2. Describe the fundamental processes governing species responses to past and present climate change.
Audience: Both Grad & Undergrad

3. Obtain and analyze paleoecological data using multivariate methods.
Audience: Both Grad & Undergrad

4. Critically analyze the readings in light of prior knowledge gained in other advanced courses.
Audience: Graduate

5. Conduct new analyses by applying these methods to new data and questions.
Audience: Graduate

GEOG/SOIL SCI 525 – SOIL GEOMORPHOLOGY
3 credits.

Soil development as related to landscape throughout the Quaternary; focusing on the relationship of soils to climate and vegetation, landscape evolution, and time; principles of soil stratigraphy; case histories of soil geomorphic studies; field trips. Students should have completed one course in geomorphology to feel comfortable with the course content.
Requisites: SOIL SCI 325 or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Identify key concepts and research efforts that link soils and landscape evolution.
Audience: Both Grad & Undergrad

2. Analyze models of soil formation in the context of geomorphology, and determine which model(s) may be applicable to problems you are interested in.
Audience: Both Grad & Undergrad

3. Utilize important quantitative methods and research tools used in soil geomorphology, many of which are more broadly applicable in geomorphology, soils, and critical zone research.
Audience: Both Grad & Undergrad

4. Review the literature and propose new research on a topic of soil geomorphology.
Audience: Graduate

GEOG/SOIL SCI 526 – HUMAN TRANSFORMATIONS OF EARTH SURFACE PROCESSES
3 credits.

Takes an earth systems approach to explore the role of human societies in shaping earth surface processes from local to global scales. We address how alterations to our landscapes and waterways affect biological, physical and chemical interactions among our biosphere, geosphere, hydrosphere and atmosphere. We discuss methods used to distinguish the "human impact" from background variability.
Requisites: Junior standing or ENVIR ST/GEOG 120
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Synthesize how major global biogeochemical cycles and earth surface processes are influenced by human activities.
Audience: Both Grad & Undergrad

2. Identify positive and negative feedbacks among the biosphere, geosphere, and atmosphere at different spatial and temporal scales.
Audience: Both Grad & Undergrad

3. Explain how different methods are used to characterize and quantify human effects on the earth system.
Audience: Both Grad & Undergrad

4. Describe how legacies of colonialism affect historical and current biases in the practice and application of earth system science.
Audience: Both Grad & Undergrad

5. Interpret research findings in peer-reviewed literature.
Audience: Both Grad & Undergrad

6. Summarize research for different audiences.
Audience: Both Grad & Undergrad

7. Identify methods to answer specific research questions and write a research proposal.
Audience: Graduate

GEOG/ENVIR ST/LAND ARC/URB R PL 532 – APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS IN PLANNING
3 credits.

Explores planning-related Geographic Information System (GIS) data, applications, analytical tools, and implementation issues.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or graduate/professional standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Identify how planning agencies use GIS.
Audience: Both Grad & Undergrad

2. Explain the nature, characteristics, and possible ways of analyzing spatial data in a planning context.
Audience: Both Grad & Undergrad

3. Communicate geospatial data and analyses effectively.
Audience: Both Grad & Undergrad

4. Obtain and analyze geospatial data using a range of spatial analysis tools for a number of planning practices.
Audience: Both Grad & Undergrad

5. Conduct site-selection and land-suitability analysis.
Audience: Both Grad & Undergrad

6. Identify ethical issues surrounding access to and use of geospatial data.

Audience: Both Grad & Undergrad

7. Analyze and provide written feedback on undergraduate student presentations.
Audience: Graduate

8. Produce a memo on land-suitability analysis.
Audience: Graduate

GEOG/ENVIR ST 534 – ENVIRONMENTAL GOVERNANCE: MARKETS, STATES AND NATURE
3 credits.

Covers real-world questions of how the environment is managed and governed through state policy, economics, and social institutions. Includes strategies within and outside of the formal institutions of government, and extends the discussion to the commodification of nature and the use of science to understand and govern the environment. Also includes case studies of environmental governance in water, carbon, species, and urban sustainability.
Requisites: Sophomore standing
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2022
Learning Outcomes: 1. Explain the concepts of governance and the tools for its analysis.
Audience: Both Grad & Undergrad

2. Identify the tools, concepts, and controversies associated with market-based environmental governance and its origins in debates over the past century.
Audience: Both Grad & Undergrad

3. Discuss the variety of traditions in understanding the relationship between states, civil society, and the environment.
Audience: Both Grad & Undergrad

4. Describe and articulate connections and common themes in environmental governance as they are expressed in a variety of settings such as economic globalization, urban planning, water resource development, conservation, and climate change.
Audience: Both Grad & Undergrad

5. Discuss the scholarly literature around environmental governance, state theory, and neoliberalism.
Audience: Graduate

GEOG/ENVIR ST 537 – CULTURE AND ENVIRONMENT
4 credits.

Geographic approaches to culture-nature relationships, including human perception of, use of, and adaptation to the physical environment, with emphasis on traditional subsistence systems; selected topics from contemporary and historical sources.
Requisites: GEOG 359, ENVIR ST/GEOG 337, 339, 439, AMER IND/ENVIR ST/GEOG 345, or graduate/professional standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Develop a cross-cultural perspective about environment-society relations.
Audience: Both Grad & Undergrad

2. Explain how certain conceptual frameworks for understanding culture-environmental relations developed in the social sciences and how these have affected conservation and development practice around the world.
Audience: Both Grad & Undergrad

3. Discuss the strengths and limitations of these frameworks for understanding the effect of human activities on the environment or in turn the effect of environmental change on human societies.
Audience: Both Grad & Undergrad

4. Identify the appropriate frameworks for analyzing particular culture-environment contexts and in so doing, be better placed to develop more effective conservation or development initiatives.
Audience: Both Grad & Undergrad

5. Apply an understanding of the strengths and weaknesses of different conceptual frameworks to develop a conceptual framing suitable for graduate research.
Audience: Graduate

GEOG 538 – THE HUMID TROPICS: ECOLOGY, SUBSISTENCE, AND DEVELOPMENT
4 credits.

Description and analysis of humid-tropical ecosystems, with emphasis on the relationships, production potential, and human modification of biotic resources.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG/ENVIR ST 557 – DEVELOPMENT AND ENVIRONMENT IN SOUTHEAST ASIA
3 credits.

Examines the political, socio-cultural, economic and ecological aspects of contemporary development and human-environment relations in mainland Southeast Asia, applying a critical and theoretically informed perspective, and focusing largely on rural issues.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe key elements that link development and environmental issues in Southeast Asia.
Audience: Both Grad & Undergrad

2. Explain the social, economic, and/or environmental dimensions of the sustainability challenges regarding a range of important policy issues with environmental and sustainability implications.
Audience: Both Grad & Undergrad

3. Apply sustainability principles and/or frameworks to addressing the challenges associated with a range of development issues that have environmental implications.
Audience: Both Grad & Undergrad

4. Analyze the causes of and solutions for sustainability challenges of various development policy decisions.
Audience: Both Grad & Undergrad

5. Apply knowledge of development and environmental issues in Southeast Asia when conducting research.
Audience: Graduate

GEOG 560 – ADVANCED QUANTITATIVE METHODS
3 credits.

Selected topics in the analysis of spatial distributions with emphasis on multivariate techniques.
Requisites: Junior standing or GEOG 360
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Discuss statistical concepts, methods, and techniques.
Audience: Both Grad & Undergrad

2. Conduct various staining analyses on geographic data.
Audience: Both Grad & Undergrad

3. Use R script programming for spatiotemporal statistical analysis.
Audience: Both Grad & Undergrad

4. Solve practical problems using statistics and spatiotemporal analysis methods.
Audience: Both Grad & Undergrad

5. Discuss the latest literature about the newly developed R scripts for geospatial data analysis.
Audience: Graduate

GEOG 565 – COLLOQUIUM FOR UNDERGRADUATE MAJORS
3 credits.

Orientation to geography as a scholarly discipline; its development, objectives, essential concepts, methods of investigation, institutions, opportunities, problems, and trends.
Requisites: Declared in Geography or Cartography and Geographic Information Systems undergraduate programs
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Conceptualize and implement an original research project.
Audience: Undergraduate

2. Collect and analyze primary data.
Audience: Undergraduate

3. Describe the breadth of geographic phenomena and arguments.
Audience: Undergraduate

4. Assess geographic explanations.
Audience: Undergraduate

5. Integrate knowledge across disciplines to develop novel perspectives.
Audience: Undergraduate

6. Present geographic arguments in written, oral, and visual formats.
Audience: Undergraduate

GEOG 566 – HISTORY OF GEOGRAPHIC THOUGHT
3 credits.

An analysis of the development and significance of basic geographic concepts and theories. Major emphasis on concepts of place, spatial relations, landscape, and human-environment relations.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2020

GEOG 572 – GRAPHIC DESIGN IN CARTOGRAPHY
3-4 credits.

Study of the map as a graphic communication, the technical and perceptual aspects of its organization, symbolic coding, color and lettering.
Requisites: GEOG 370 or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Explain how maps work by justifying design decisions.
Audience: Both Grad & Undergrad

2. Design maps while applying principles of visual storytelling genres and tropes; bivariate and multivariate mapping; visual layout and balance; terrain representation; time representation; iconic map symbol design; and aesthetics and style.
Audience: Both Grad & Undergrad

3. Execute original map designs for the web from conceptualization to delivery while estimating and managing the time needed for an open-ended design project.
Audience: Both Grad & Undergrad

4. Acquire and prepare geographic datasets.
Audience: Both Grad & Undergrad

5. Follow and deviate from a cartographic workflow using contemporary cartography and GIS software.
Audience: Both Grad & Undergrad

6. Discuss cartographic design within its broader historical and social contexts.
Audience: Both Grad & Undergrad

7. Provide constructive feedback for peers and self during the process of design
Audience: Both Grad & Undergrad

8. Place design principles within the contemporary cartographic literature.

Audience: Graduate

GEOG 573 – ADVANCED GEOCOMPUTING AND GEOSPATIAL BIG DATA ANALYTICS
4 credits.

Geospatial big data is an extension of big data with an emphasis on the geospatial component. It is used to describe large volumes of georeferenced data about various aspects of the environment and society captured by millions of environmental and human sensors. An introduction to the theory, techniques, and analytical methods for geospatial big data. Methods for storing, processing, analyzing, and visualizing various types of geospatial big data using advanced Python programming will be introduced. Designed for students who have programming experience and want to reinforce their programming skills and learn AI and machine learning methods for solving geospatial big data problems.
Requisites: GEOG 378, COMP SCI 220, or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Summarize the fundamental concepts of geospatial big data.
Audience: Both Grad & Undergrad

2. Describe how to develop computational models and analytical methods for geospatial big data.
Audience: Both Grad & Undergrad

3. Identify the challenges in storing, managing, processing, analyzing, visualizing, and verifying the quality of data.
Audience: Both Grad & Undergrad

4. Recall the major high-performance platforms for big data processing.
Audience: Both Grad & Undergrad

5. Use Python programming for (spatiotemporal) data analysis and machine-learning tasks.
Audience: Both Grad & Undergrad

6. Collaborate in teams and complete tasks under time pressure.
Audience: Both Grad & Undergrad

7. Lead efforts on teamwork and geospatial problem solving skill development.
Audience: Graduate

8. Demonstrate higher-order synthesis and spatial analysis skills in spatial data science.
Audience: Graduate

GEOG 574 – GEOSPATIAL DATABASE DESIGN AND DEVELOPMENT
4 credits.

Introduces the basic concepts, techniques and methodologies for designing and implementing a spatial database to prepare for professional work as a GIS designer, analyst, specialist or researcher. Design conceptual spatial database models and implement them within specific spatial data management systems (DBMS). Covers basic SQL database language and the latest developments in database systems (e.g. NoSQL database) for managing and mining spatial big data such as social media datasets and GPS trajectories.
Requisites: GEOG 170, GEOG 370, ENVIR ST/CIV ENGR/GEOG 377 or graduate/professional standing
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Describe database design and implementation in GIS.
Audience: Both Grad & Undergrad

2. Utilize open-source database software to create, manipulate, and manage spatial relational databases.
Audience: Both Grad & Undergrad

3. Perform spatial queries and operations to analyze and manage geospatial data within a spatial database environment.
Audience: Both Grad & Undergrad

4. Use spatial databases for big data management.
Audience: Both Grad & Undergrad

5. Design and develop a spatial database and program to solve specific geographic information problems.
Audience: Both Grad & Undergrad

6. Describe the concept of spatial indexing and its significance in optimizing spatial data retrieval.
Audience: Both Grad & Undergrad

7. Design, develop, and implement spatial database solutions to address real-world geographic information problems .
Audience: Both Grad & Undergrad

8. Integrate spatial databases with programming languages to develop data-driven geospatial applications.
Audience: Graduate

GEOG 575 – INTERACTIVE CARTOGRAPHY & GEOVISUALIZATION
4 credits.

Examines emerging topics related to the design of user interfaces for manipulating maps, focusing on new cartographic challenges in Interactive Cartography, Geographic Visualization, and Geovisual Analytics and drawing upon relevant insight in Human-Computer Interaction, Information Visualization, and Usability Engineering.
Requisites: GEOG 370, 378, or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Design interactive maps by applying the principles of user experience and user interface design; interface complexity, constraint, flexibility, and freedom; user- and technology-based constraints on UI/UX design; interaction operators; non-map visualization techniques; direct and indirect map-based interface styles; coordinated big data visualization and interactive highlighting techniques.
Audience: Both Grad & Undergrad

2. Develop interactive maps that follow and deviate from a cartographic workflow using relevant coding languages.
Audience: Both Grad & Undergrad

3. Plan and execute a user-centered design process from needs assessment to transition
Audience: Both Grad & Undergrad

4. Acquire and prepare geographic datasets.
Audience: Both Grad & Undergrad

5. Design within user-defined and technology-defined functional constraints while evaluating and improving prototypes and application releases
Audience: Both Grad & Undergrad

6. Use online collaboration tools in small groups
Audience: Both Grad & Undergrad

7. Construct spatiotemporal and multivariate visualizations using contemporary cartographic software.
Audience: Both Grad & Undergrad

8. Place design principles within the contemporary cartographic literature.

Audience: Graduate

GEOG 576 – GEOSPATIAL WEB AND MOBILE PROGRAMMING
4 credits.

Covers the programming concepts and skills for understanding construction and implementation of high quality spatial web portal and mobile Apps to support geospatial data access, analysis, sharing, and synthesis over the internet. Builds on basic programming experience.
Requisites: (GEOG 170, GEOG 370, or CIV ENGR/ENVIR ST/ GEOG 377) and (GEOG 378, COMP SCI 300, COMP SCI 369, or COMP SCI 400), or graduate/professional standing
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Develop web programs for geospatial data mapping and visualization.
Audience: Both Grad & Undergrad

2. Use GIS programming and mapping toolkits.
Audience: Both Grad & Undergrad

3. Determine, track, and record a mobile device's current location.
Audience: Both Grad & Undergrad

4. Design and develop mobile apps to retrieve, manipulate, and visualize geospatial datasets.
Audience: Both Grad & Undergrad

5. Judge the design and implementation of a web/mobile system for different geospatial applications.
Audience: Graduate

GEOG 578 – GIS APPLICATIONS
4 credits.

Application and use of GIS techniques in physical and human geography. Includes an introduction to a generic framework of GIS applications, case studies, and student projects. Cases range from urban and regional geography, to marketing geography, and to physical and environmental geography.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Conceptualize and implement a GIS project from start to finish within a team environment.
Audience: Undergraduate

2. Identify, formulate, and solve geographic problems using appropriate information analytical approaches.
Audience: Undergraduate

3. Communicate effectively through written reports, oral presentations, and discussion.
Audience: Undergraduate

4. Prepare and present effective, informative, and persuasive arguments utilizing GIS.
Audience: Undergraduate

GEOG 579 – GIS AND SPATIAL ANALYSIS
4 credits.

Principles and algorithms for spatial analysis in geographic imformation systems. A theoretical and practical examination of analytical methods used in GIS, including point, line and polygon processing, interpolation, smoothing, spatial overlay and query, network analysis, terrain analysis, and classification.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or graduate/professional standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026
Learning Outcomes: 1. Identify the limitations of common spatial data analytical techniques.
Audience: Both Grad & Undergrad

2. Determine the usefulness of common spatial data analysis techniques.
Audience: Both Grad & Undergrad

3. Select and apply these techniques in respective applications.
Audience: Both Grad & Undergrad

4. Investigate the limitations of emerging spatial data analytical techniques to avoid misuse or abuse of these techniques.
Audience: Both Grad & Undergrad

5. Make connections to one's own research areas either as the basis for technological improvements or as effective applications of these technologies.
Audience: Graduate

GEOG 675 – SPECIAL TOPICS IN GEOGRAPHY
3 credits.

Explores emerging topics in human and people-environment geography.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG 681 – SENIOR HONORS THESIS
2-3 credits.

Individual mentored study for seniors completing theses for Honors in the Major as arranged with a faculty member
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2025

GEOG 682 – SENIOR HONORS THESIS
2-3 credits.

Individual mentored study for seniors completing theses for Honors in the Major as arranged with a faculty member
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG 691 – SENIOR THESIS
2-3 credits.

Individual mentored study for seniors completing theses as arranged with a faculty member
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2025

GEOG 692 – SENIOR THESIS
2-3 credits.

Individual mentored study for seniors completing theses as arranged with a faculty member
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG 698 – DIRECTED STUDY
1-3 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2020

GEOG 699 – DIRECTED STUDY
1-3 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG 765 – GEOGRAPHICAL INQUIRY AND ANALYSIS: AN INTRODUCTION
1 credit.

Geographic perspectives and analyses: history of the discipline, issues and research frontiers, interests and perspectives of Madison faculty, structure of graduate study in the department, research facilities and opportunities.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025

GEOG 766 – GEOGRAPHICAL INQUIRY AND ANALYSIS: TECHNIQUES
1-3 credits.

Engaging in geographic research: analysis of successful proposals and published papers and books; different approaches to geographic research; writing of proposals for students' own research.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG 777 – CAPSTONE IN GIS DEVELOPMENT
4 credits.

Covers practical and challenging cases in GIS which require programming and other GIS development skills (such as geospatial algorithm development and implementation). Cases cover the wide spectrum of GIS development projects in the GIS professions ranging from GIS data management, advanced spatial analysis, spatial database development and web/mobile programming, to cartography/geovisualization. Focuses on integration of skills from other courses into a GIS development project.
Requisites: GEOG 378, 572, 574, 575, 576, 579 and graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG 778 – PRACTICUM IN GIS DEVELOPMENT
4 credits.

Develop the ability to conceive and manage a real-world GIS development project, and to design a plan for solving the project.
Requisites: GEOG 378, 572, 574, 575, 576, 579 and graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

GEOG 799 – INDEPENDENT READING
1-3 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2021

GEOG 900 – SEMINAR IN GEOGRAPHY
1-3 credits.

Surveys recent and classic works in geography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2019

GEOG 901 – SEMINAR IN CULTURAL GEOGRAPHY
2-3 credits.

Surveys recent and classic works in cultural and human geography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2025

GEOG 918 – SEMINAR IN POLITICAL GEOGRAPHY
2-3 credits.

Surveys recent and classic works in political geography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025

GEOG 920 – SEMINAR IN PHYSICAL GEOGRAPHY
1-3 credits.

Surveys recent and classic works in physical geography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2025

GEOG 930 – SEMINAR IN PEOPLE-ENVIRONMENT GEOGRAPHY
2-3 credits.

Surveys recent and classic works in people-environment geography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG/AGROECOL/ATM OCN/BOTANY/ENTOM/ENVIR ST/ ZOOLOGY 953 – INTRODUCTION TO ECOLOGY RESEARCH AT UW-MADISON
1-2 credits.

Introduction to diverse ecological research across the UW-Madison Campus. Discussions on adapting to graduate school and graduate-level ecological research, key topics in professional development, and research presentations by faculty members.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025
Learning Outcomes: 1. Develop an appreciation for the foundations and legacy of ecology research and conservation science at UW-Madison
Audience: Graduate

2. Recognize the diversity and strength of current research in ecology at UW-Madison
Audience: Graduate

3. Differentiate expectations between undergraduate education and those of independent research for graduate degrees in ecology
Audience: Graduate

4. Develop appropriate expectations for advisors and advisees
Audience: Graduate

5. Reason through hypothetical ethical challenges and identify potential solutions based on professional codes of ethics
Audience: Graduate

6. Develop an understanding of the suite of skills associated with success in graduate school and in science
Audience: Graduate

GEOG 970 – SEMINAR IN GEOGRAPHIC INFORMATION SCIENCE
1-3 credits.

Surveys recent and classic works in cartography and geographic information science.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG/ATM OCN/BOTANY/ENVIR ST/GEOSCI/ZOOLOGY 980 – EARTH SYSTEM SCIENCE SEMINAR
1 credit.

Topics in earth system science. Emphasis on the coupling between atmospheric, oceanic and land surface systems, involving physical geochemical and biological processes, and including interactions with human systems.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

GEOG/A A E/ANTHRO/C&E SOC/HISTORY/LACIS/POLI SCI/PORTUG/SOC/SPANISH 982 – INTERDEPARTMENTAL SEMINAR IN THE LATIN-AMERICAN AREA
1-3 credits.

Interdisciplinary inquiry in Latin American society and culture.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2025

GEOG/AFRICAN/ANTHRO/ECON/HISTORY/POLI SCI 983 – INTERDEPARTMENTAL SEMINAR IN AFRICAN STUDIES TOPICS
3 credits.

Interdisciplinary inquiry in African societies and cultures.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop in-depth knowledge in a sub-field of specialization within African studies
Audience: Graduate

2. Acquire and demonstrate understanding of major theories, approaches, concepts, currently informing African studies
Audience: Graduate

3. Understand your process of learning and possess the capacity to intentionally seek, evaluate, and learn from information, and to recognize and reduce bias in thinking.
Audience: Graduate

4. Gain firm knowledge of existing research in African studies
Audience: Graduate

5. Develop and improve speaking, readings, listening, and writing skills
Audience: Graduate

6. Write and speak across disciplinary boundaries
Audience: Graduate

7. Analyze texts from various theoretical and critical perspectives
Audience: Graduate

GEOG 990 – RESEARCH AND THESIS
1-9 credits.

Individual mentored study for completing theses, as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

GEOG 999 – INDEPENDENT WORK
1-3 credits.

Independent study as arranged with a faculty member.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026