

Geography (GRG)

GRG 301C, 401C The Natural Environment 3-4 Hours

An introduction to the study of the Earth from a holistic perspective including geologic, atmospheric, ecological, and water sciences and its relevance to present-day environmental problems.

GRG 301K Weather and Climate 3 Hours

A survey of meteorological phenomena and climatological processes of the earth.

GRG 302L Landscapes and Cosmopolitanism in Mesoamerica 3 Hours

Explore the ancient civilizations of Mesoamerica, the ways in which they are studied, the landscapes they inhabited, their worldview, and the persistence of the past into the present. Discover how different societies manifested a core set of beliefs shared by all Mesoamerican civilizations while at the same time maintaining local cultural identities. Assess changes in Mesoamerica both spatially and temporally from the Archaic Period through the Spanish Conquest, colonialism, and into modern times.

GRG 302S Special Topics in Geography 3 Hours

GRG 304E, 404E Environmental Science: A Changing World 3-4 Hours
Surveys the major global environmental concerns affecting the Earth and its residents from the perspectives of the environmental sciences.

GRG 305 This Human World: An Introduction to Geography 3 Hours
Introductory survey of human geography, including human-environment relations, cultural patterns and processes, and geography's relation to other fields of study.

GRG 306C Conservation 3 Hours

Introduction to environmental management, with emphasis on the major causes and consequences of environmental degradation. The course is organized around the premise that people cannot solve environmental problems unless they know how and why they occur; a major objective is to identify and understand the sociocultural forces that drive environmental degradation.

GRG 307C Introduction to Urban Studies 3 Hours

A multidisciplinary study of cities and complex urban environments; historical and contemporary issues from both national and international perspectives.

GRG 309C Creating the Sustainable Society 3 Hours

Overview of sustainability as something human beings must strive to create in an era of global warming and ever greater social inequalities, both between and within countries.

GRG 310C, 410C Spatial Data and Analysis 3-4 Hours

Fundamental concepts in spatial data acquisition, analysis, and presentation, with emphasis on the needs of professionals in cartography, geographic information systems (GIS), and remote sensing.

GRG 312E, 412E Digital Earth 3-4 Hours

Explore concepts in geospatial technologies that are becoming increasingly important tools in research, policy, and everyday life. Discuss geospatial data sources (ex. GPS, citizen science, satellite imagery), applications (ex. disaster relief, biodiversity conservation, disease spread), and broader implications of their use (ex. privacy, ethical, legal issues).

GRG 312K North American Borderlands 3 Hours

Explore the formation of political borders in nineteenth- and twentieth-century North America, their contestation, and the multiple meanings attached to them.

GRG 319 Geography of Latin America 3 Hours

Adaptations to population growth and spatial integration in cultural landscapes of great natural and ethnic diversity; problems of frontiers and cities.

GRG 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S Topics in Geography 1-9 Hours

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad adviser in the Department of Geography and the Environment. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program.

GRG 320J Environmental Justice 3 Hours

Examine the socio-political, economic, and racialized history of both environmental ruin and environmental justice via a critical geographic lens connecting feminist political ecology, antiracist and abolitionist ecologies, decolonial geographies, and critical physical geographies.

GRG 320K Land and Life: The American Southwest 3 Hours

Historical geography of the southwestern United States, emphasizing the ways of life of American Indian, Spanish, mestizo, and Anglo cultures.

GRG 320M Geography of Media 3 Hours

Explores communication media from a geographical perspective. Subjects include place images, changing attitudes about public and private spaces, social networking, and the geography of communications infrastructure.

GRG 320N Exhibitions and Public Spectacle 3 Hours

Investigate exhibits, world's fairs, museum, monuments, theme parks, and historical reconstructions from Europe and the US, with attention to images of how their sponsoring nations or other entities want to be seen. Examine evidence for both the good and bad sides of national pride and identity. Explore examples of how large-scale culture projects and the public interact. Consider the lasting marks left on the cities and countries sponsoring them.

GRG 320P Political Geography 3 Hours

Explores how social power relations play out across space, and how spatial patterns and processes underlie various forms of social power. Focus on borders, conflicts, peacemaking, migration, environmental politics, urban politics, embodiment, emotion and affect.

GRG 320U Urban Imaginaries 3 Hours

Use science fiction literature, film, and other cultural artifacts as a platform to launch an examination into the central concept of urban imaginaries. Discuss the politics (and potential) of urban representation as well as understand how urban imaginaries influence everyday urban life and the ongoing production of urban space and place.

GRG 321D Development and Social Movement in East and Southeast Asia 3 Hours

Examine the notions of development and the ways in which development is associated with state building, moral economy, political performance, and accumulation regimes. Explore the development of civil society and social movement in East Asia, and explanations of the mechanisms and drivers of displacement. Conceptualize the "Right to the City", and alternative right-based approaches to land, housing, infrastructure, commons and public resources.

GRG 321F Food in the Racialized City 3 Hours

Explore a variety of issues related to producing, accessing, and consuming food in city spaces in the context of racial inequities. Investigate and question constructs such as "food" and "city" as means of exploring different points of view and approaches to studying not only food and cities but also various approaches to food justice.

GRG 321L Archaeology of Climate Change 3 Hours

Examines why climate changes, the methods for recording climate change, and includes case studies of the varied responses of past human societies to climate change in different geographic regions and time periods with varying socio-political and economic systems.

GRG 321U Race, Social Justice, and the City 3 Hours

Examine the way that race and inequality are built into the structures and ideas surrounding urban life through the spatial and racial structures of capitalist development, racialized migration, and redevelopment and gentrification campaigns. Analyze how United States cities are racial geographies.

GRG 322D Human Health and the Environment 3 Hours

Introduction to environmental health concepts. Examine current events to explore the relationship between environment and health and whether an environmental condition is or is not an important threat to health. Discuss the complexity of determining "proof" in this field.

GRG 322G Politics of Protecting the Great Barrier Reef 3 Hours

Examine the numerous environmental challenges Australia's Great Barrier Reef (GBR) faces. Explore the livelihoods of the people who depend on or impact the GBR, and the people who are trying to save it.

GRG 322L Geographies of Latin American to United States Migration 3 Hours

Examine the contemporary complex multi-scalar origins, patterns, and processes of Latin American and Caribbean migration and settlement in the United States. Through a place-specific, spatially contextualized, and historically situated approach, explore the collective and individual experiences of migrants, asylum seekers, and refugees from select nations including: Mexico, Guatemala, Honduras, El Salvador, Puerto Rico, the Dominican Republic, Haiti, and Cuba. Analyze the multi-layered factors shaping diverse Latin American migratory patterns and processes.

GRG 322M Maya Art and Architecture 3 Hours

Introduction to the artistic traditions of the ancient Maya, tracing their development up to the time of European contact. Students will examine various important themes of Maya culture including history, ritual, and cosmology as revealed in sculpture, hieroglyphs, painting, and architectural design.

GRG 323K South America: Nature, Society and Sustainability 3 Hours

Field study of environmental and social change in selected landscapes in South America, such as protected areas; places of food production; transportation routes; migrant landscapes; urban areas; sites of cultural and historical importance; and issues of human rights.

GRG 323M Literature, Culture, and Ecology in Northern and Central Europe 3 Hours

Explore a variety of texts, films, and artifacts from Northern and Central Europe for the insights they provide about the interrelationships between nature and culture and strategies for developing a sustainable relationship to the world around us.

GRG 324E Applications and Ethics of Digital Spatial Technologies 3 Hours

Explore the applications and ethical considerations of remote sensing, the Global Positioning System (GPS), and Geographic Information System (GIS) technologies and practice.

GRG 324F Race, Capitalism, and the Environment 3 Hours

GRG 324M Sustainable Maya Geographies - Past to Future 3 Hours
Explore landscapes, conservation, and human-environment dynamics in the Maya region of Central America from more than 10,000 years ago to modern times. Compare sustainable practices from the past with those of indigenous Maya communities today to guide the future.

GRG 325 Geography of Texas 3 Hours

Texas as an environmental and cultural borderland: as a transition zone between plains and mountains, humid and arid, South and West, Anglo-America and Latin America.

GRG 325E The Healthy, Livable City 3 Hours

Explore the design of the built environment and its potential for addressing and preventing many childhood and adult health concerns in the United States. Examine how to create healthy, walkable, vital communities for all.

GRG 326 Regions and Cultures of Europe 3 Hours

Spatial patterns in Europe, with emphasis on cultural, historical, and political geography.

GRG 326C Sensing: Elemental Media 3 Hours

Explore a sensory ethnographic investigation of urban ecology, organized around air, water, earth, and fire as themes for engaging with the city through media and the senses.

GRG 326G International Political Economy of Lower-Income Countries 3 Hours

Explore the ways that China, India, Brazil and other lower-income countries are transforming the patterns in global finance, trade, aid, women's empowerment, and the control or corruption.

GRG 327 Geography of the Former Soviet Union 3 Hours

A systematic introduction to cultural, physical, political, and economic geography of the former Soviet Union. Focus on the fundamental transformation that the former Socialist Union Republics, now sovereign states, have undergone since 1991.

GRG 327G Introduction to Geospatial Artificial Intelligence 3 Hours

Focus on artificial intelligence (AI) and machine learning (ML) methods and their applications on geospatial problems. Explore python programming and GIS data preparation for machine learning models, ML foundations, regression, clustering, decision tree and random forest, neural network, embedding, and location representation learning.

GRG 328E Geography in Eastern Europe and Eurasia 3 Hours

Explore alternatives to nation-state imaginaries across Eastern Europe and Eurasia. Examine spatial thinking, utopia, dystopia, the history of geosciences, counter-mapping, and the decolonial geopoetics of space.

GRG 328F Black Geographies 3 Hours

Explore the relationship between Blackness and the production of space and place. Examine the tensions and possibilities that emerge when Black people are rendered un-geographic as a fundamental component of racial capitalism while they are simultaneously creating spaces of freedom under constant threats to Black life.

GRG 328J Land in America 3 Hours

Explore how the history of land helps explain the society we live in today and ideas about the human-nature relationship.

GRG 328L Asian Diaspora on Indigenous Lands 3 Hours

Explore Indigenous and Asian entanglements and solidarities on Turtle Island (North America) and the Pacific. Examine settler colonialism, racial capitalism, war and militarism, racism and power, and environmental change.

GRG 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S Topics in Geography 1-9 Hours

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad adviser in the Department of Geography and the Environment. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program.

GRG 330F Geographies of International Development in Africa 3 Hours
Critically examines the major approaches to "Development" in colonial and postcolonial eras, with a focus on a range of African resources: from water to wildlife, forests to farms, airways to rangelands, and including a consideration of African bodies themselves as sites of development and resistance.

GRG 330L Lidar Analysis 3 Hours

Discuss the fundamental concepts and applications of light detection and ranging (lidar). Assess aerial and ground-based lidar including the quality of the data, how to process the raw data, and analysis of data.

GRG 330W, 430W Water and Watersheds 3-4 Hours

Exposure to numerical analyses techniques developed by hydrologists and to fundamental equations controlling water transfer over and through earth materials. Learn how to administer hydrologic applications to practical problems in physical geography, geology, civil engineering, ecology, and environmental sciences.

GRG 331E East European Transnational Worlds to 1914 3 Hours

Examine an overview of major developments in the economic, political, social, cultural, and gender and sexuality fields of East European history before 1914. Explore diplomacy, institutional legacies of war and peace, urban and rural developments and inequalities, spaces of language and religion, race, labor migration, and the arts.

GRG 331K Nature, Society, and Adaptation 3 Hours

Long term trajectories of change in human environment relationships, including issues of human evolution and human nature, violence, population, food, agriculture, urbanization, globalizing modernization, and environmental impacts; issues of sustainability, cultural survival, human rights, and environmental protection.

GRG 332L Community and Citizen Science 3 Hours

Examine the contributions of volunteered geographic information (VGI) to geographic knowledge alongside an analysis of alternative forms of community-based knowledge production. Explore an overview of citizen science, community science, and VGI datasets. Develop and carry out community-based participatory research projects informed by the growing literature on community and citizen science.

GRG 333C Severe and Unusual Weather 3 Hours

A continuation of Geography 301K, focuses on atmospheric hazards such as severe thunderstorms and their offspring (hail, lightning, tornadoes, damaging winds and flash floods) as well as tropical cyclones. Covers human risk perception in relation to atmospheric hazards.

GRG 333K Climate Change 3 Hours

Examines changes in climatic systems over both short and long time periods in relation to impacts on physical and ecological systems. Discusses past, present, and future changes in climatic conditions and the methods used to make those evaluations.

GRG 334 Conservation, Resources, and Technology 3 Hours

Analysis of the relationship between the human population and its resource base, with particular emphasis on current problems in environmental resource management.

GRG 334E Children's Environmental Health 3 Hours

Discuss environmental health issues as they pertain to children's health. Focus on emerging scientific and public health issues such as water quality, air pollution, endocrine-disrupting chemicals, and the food environment.

GRG 334K Soils 3 Hours

Morphology, genesis, properties, and distribution of world soils. Factors of soil formation.

GRG 334L Vulnerability to Natural Hazards 3 Hours

An interdisciplinary approach, set right at the nexus of both physical and human geography, to studying the types of natural disasters that occur throughout Earth with a focus on tropical areas. Explore a region's susceptibility to natural disasters by studying the physical phenomena that incite specific hazards so that their spatial distribution can be outlined. Utilize theoretical frameworks that can expose the social causes of human vulnerability, the political repercussions of disasters, and how disaster response varies from country to country depending on varying political stances and economic conditions.

GRG 335C Quaternary Landscapes 3 Hours

Changing physical and biotic landscapes on the Ice Age earth during the last two million years. Reconstruction of Quaternary geomorphic landscapes based on principles and applications of geochronology and paleoclimatology.

GRG 335D Anthropocene 3 Hours

Evaluates the role of humans in changing Earth systems. Examines the evidence used to reconstruct past environments, to decipher the ecological and biogeographical consequences of land use, to measure altered surface processes, to distinguish the anthropogenic contribution to climate change, and to predict likely future scenarios. Explores the interaction of human history with altered biophysical patterns and processes. Assesses the recognition of the Anthropocene as a potential new epoch in Earth history, including the implications of that recognition for environmental stewardship.

GRG 335K Mountain Geocology 3 Hours

Geological evolution of mountains. Physical geography of mountains: climates, soils, vegetation, landforms and geomorphic processes.

GRG 335N Landscape Ecology 3 Hours

Discuss spatial patterns in the Earth's biosphere found within landscapes, typically areas measured in square kilometers. Examine the processes that create those patterns, drawing from ecology, biogeography, and many other disciplines. Use Geographic Information Systems (GIS) to analyze and understand the spatial arrangements and configurations of natural and human-modified environments.

GRG 336 Contemporary Cultural Geography 3 Hours

Recent theoretical developments in cultural geography, with a focus on landscapes and the everyday practices that imbue them with meaning; the ways those meanings are contested and are the foci of struggle; and how the relationship between culture and space plays a central role in the social construction of identity.

GRG 336C National Parks and Protected Areas 3 Hours

Introduces current conservation principles and management strategies; outlines the challenges, changes, and dilemmas associated with protected areas.

GRG 337 The Modern American City 3 Hours

Issues facing residents of United States cities, such as transportation and housing, poverty and crime, metropolitan finance, environmental and architectural design; historical/comparative urban evolution.

GRG 338C Rivers and Landscapes: Fluvial Geomorphology 3 Hours

Drainage basin evolution and channel adjustment, variability of river systems in differing geomorphic regimes, relationships between fluvial systems and other components of physical geography, and the role of humans as geomorphic agents.

GRG 339, 439 Process Geomorphology 3-4 Hours

Analysis of geomorphic processes and their effects on landform development.

GRG 339K Environment, Development, and Food Production 3 Hours

Assessment of various types of agriculture with regard to environmental factors and management techniques.

GRG 340D Political Ecology of Globalization and Environmental Degradation 3 Hours

Study of current environmental problems from the perspective of political ecology, which critically examines political, economic, and social relations between humans and the natural world. Uses case studies from Africa, Latin America, Asia, and the Middle East to address climate change, deforestation, desertification, biodiversity, and environmental justice.

GRG 440L Landuse/Landcover Change Practicum 4 Hours

Focuses on best practices for classifying and mapping land use and land cover, as well as how they change over time in an experiential learning environment. Develop testable hypotheses answered by the original data analysis and interpretation.

GRG 340U Internship and Service Learning 3 Hours

Internship experience in an urban studies-related public or nonprofit agency. The opportunity to apply the knowledge, theory, and understanding gained from courses in areas of specialization to urban issues in a professional setting. Includes an academic service-learning component.

GRG 341K Landscapes of Mexico and Caribbean America 3 Hours

The natural regions and cultural landscapes of Mexico, Central America, and the West Indies.

GRG 342C Sustainable Development 3 Hours

Historical and contemporary analysis of international development with a focus on the prospects for environmental sustainability.

GRG 342N Sustainable Landscapes and Seascapes 3 Hours

Survey the ecological, economic, and social dimensions of sustainable uses of land-based and aquatic natural resources. Examine the sustainability of landscapes utilized for forestry, farming, agroforestry, and rangeland systems, as well as the riverscapes and seascapes utilized by people.

GRG 342S Sustainability, Equity, and Health 3 Hours

GRG 343E Mapping Latin America 3 Hours

Discuss the role of maps in the creation of Latin America as a specific sort of place. As such, allows familiarity with a broad overview of Latin American history from Pre-Columbian civilizations to the modern period.

GRG 344G Environmental Law 3 Hours

Examine environmental law and its impact on all life. Analyze key federal environmental statutes and leading cases in which these statutes have been interpreted by courts.

GRG 344K Global Food, Farming, and Hunger 3 Hours

Examination of contemporary transformations in global agro-food systems, with emphasis on the current paradox of epidemic obesity in some parts of the world and enduring hunger in others.

GRG 346 The Human Use of the Earth 3 Hours

The state of the world from an ecological perspective. Case studies are drawn from a wide range of ecological settings and involve both traditional and modern societies.

GRG 348E Tourism and Place in the Global South 3 Hours

Debunk the myth that tourism is inherently desirable by unpacking the mechanisms of violence and inequalities of power embedded in tourism and tourism development.

GRG 349S Global Sustainability and Soil 3 Hours

Examine soil as a resource from the perspectives of natural and sustainability science, including soil ecology and biodiversity, formation, fertility for ecosystems and farming systems, soil health, distinguishing characteristics in nature, taxonomy, and soil spatial variability around the globe.

GRG 350E Geoprocessing 3 Hours

Computer programming and scripting applied to geospatial data.

GRG 350K Geographies of Globalization 3 Hours

Examines globalization in historical and contemporary contexts, with a focus on race, class and gendered power.

GRG 356C Geo-Archaeology and Environmental History 3 Hours

Long-term ecology as reconstructed from settlement and land-use histories. Empirical case studies in environmental history from the Mediterranean region, the Near East, and Mesoamerica. Applications to degradation, desertification, sustainability, and global change.

GRG 356D Water Resources in Latin America and the Caribbean 3 Hours

Examine the variability of landscapes, climatic regions, and anthropogenic activities found throughout Latin America and the insular Caribbean to explore the complex issues related to water resource accessibility.

GRG 356T Topics in Geography 3 Hours

GRG 356T.1 The Culture of Cities 3 Hours

Examines the social, geographical, and cultural evolution of the United States from a rural and small-town society to an urban and suburban nation. Subjects may include the segregation of public and private space; the formation of urban subcultures organized by gender, work, race, religion, and sexuality; social and spatial divisions between rich and poor and native-born and immigrant; and the increasing importance of cultural capital" in reshaping urban politics and in conflicts over revitalization and gentrification.

GRG 356T.14 Geography of Religion in Eastern Europe and Russia 3 Hours

A comprehensive overview of major religious culture regions in the former Eastern bloc countries.

GRG 356T.2 Memory and Place 3 Hours

Explores how cultural memory is produced in its various forms, from memorials, public art, and commodities to popular culture, rituals, and museums, and how public remembering is inevitably anchored in specific geographic places.

GRG 356T.3 Geographical Information Systems and Remote Sensing for Archaeology and Paleontology 3 Hours

Designed to give students interested in the fields of archaeology, physical anthropology, and paleontology a foundation in the use of geographical information systems (GIS) and the analysis of remotely sensed data from satellites and aerial photographs.

GRG 356T.4 Northern Lands and Cultures 3 Hours

Develops geographical understanding of the Circumpolar region of the North, an ancient human habitat, home to distinct millennia-old civilizations.

GRG 356T.5 Urban Publics 3 Hours

The concept of the public in the city and how it has shifted over time along the lines of gender, ethnicity, race, and class. Examines contemporary struggles over defining the urban public and how those struggles are linked to social, cultural, political, and economic forces. Subjects include uses of public space, the public sphere, eminent domain, urban politics, civic engagement, and political participation.

GRG 356T.6 The Environmental Change and Management of Large Rivers 3 Hours

An interdisciplinary perspective on the physical processes of large rivers. Subjects include land degradation; deforestation; river engineering; flood processes; sedimentology; floodplains management; ecohydrology; Quaternary fluvial geomorphology; and paleohydrology.

GRG 356T.8 Global Societies 3 Hours

The use of geographical perspectives to make sense of the global society. Subjects include globalization, war, economic crisis, and social movements.

GRG 357 Medical Geography 3 Hours

The geographic distribution, expansion, and contraction of the infectious diseases that have the greatest influence in shaping human societies today: malaria, AIDS, and others.

GRG 358E Geography and Religion 3 Hours

Ideas about the relationships among the natural world, myth, and ritual; principal focus on Christianity, Islam, and Judaism and their offshoots and antagonists in the Western world.

GRG 460G Environmental Geographic Information Systems 4 Hours

An introduction to the creation and use of geographic information systems.

GRG 462K Introduction to Remote Sensing of the Environment 4 Hours

The use of electromagnetic energy to sense objects in the natural environment; interpretation and recognition of patterns detected by sensors.

GRG 464K Advanced Remote Sensing and Pattern Analysis 4 Hours

Advanced classification techniques for satellite image processing and landscape pattern analysis.

GRG 366C Comparative Ecosystems 3 Hours

The important ecosystem processes that affect the distributions, characteristics, and management of natural environments at landscape, regional, and continental scales. Ecosystem functions, including nutrient cycling, water balance, and the role of natural disturbances in a wide range of ecosystems, from the tundra to the rain forests and grasslands of the tropics.

GRG 366K Biogeography 3 Hours

Contemporary patterns of plant and animal distribution, and the environmental and historical processes affecting them.

GRG 367D Climate Change and Vegetation Response in the Kalahari 3 Hours

Using the Kalahari as a basis for understanding, explore the ecological dynamics of savanna systems and their interactions with climatic variability over time and space. The focus on monitoring and assessment to inform rangeland management includes vegetation sampling and calculations of carrying capacity. Examine how savanna systems dynamics are comparable across regions, and thus are both globally and UT-locally relevant.

GRG 367K Vegetation Ecology 3 Hours

Plant autecology and synecology. Ecological factors and processes of plant communities. Vegetation geocology, succession, and dynamics.

GRG 368C Spatial Analysis and Geographic Information Systems 3 Hours

Addresses spatial problem solving by focusing on both the theoretical/conceptual and practical aspects of geographic information systems modeling. Describes geographic information systems techniques and spatial statistics used to quantify and measure spatial patterns.

GRG 368D Enviro-Cultural Dynamics in Botswana 3 Hours

Examines the Kalahari case study of the San "First People" and their history of treatment in the Central Kalahari Game Reserve compared to other more recently arriving peoples. Explores how cultural groups are differentially treated and how that treatment and their ties to and uses of the landscape evolves over time.

GRG 369D GIS Applications in Social and Environmental Science 3 Hours

A hands-on approach to covering the appropriate use of geographical information systems (GIS) and spatial statistical analysis in different sub-disciplines.

GRG 470C Advanced Geographic Information Systems 4 Hours

Study of methods of spatial analysis, design and implementation of a geographic information system, vector and raster modeling, and advanced applications of geographic information systems.

GRG 370D Spatial Reasoning with Geographic Information Systems 3 Hours

Using Geographic Information Systems (GIS) and spatial analysis, examine different types of real-world problems. Read newspaper and journal articles about real issues or problems and explore how they can be addressed and potentially solved. Focus on specific problems and learn about the GIS tools and techniques that are appropriate for each scenario.

GRG 373F Field Techniques 3 Hours

Introduction to the collection and mapping of environmental and cultural data, involving both classroom lectures and outdoor exercises.

GRG 373K Field Methods for Landscape Characterization 3 Hours

The design of research questions and the acquisition of data for the characterization of landscapes. Utilizes geographical and ecological field-based methods.

GRG 374 Frontiers in Geography 3 Hours

Current concerns and methodology in the field of geography; an introduction to theory and research in geography.

GRG 476T Topics in Geography 4 Hours

GRG 679H Honors Tutorial Course 6 Hours

Individual reading of selected works for one semester, followed in the second semester by the writing of an honors thesis. Regular conferences with the faculty supervisor are also required.

GRG 379K Conference Course 3 Hours

Supervised individual study of selected problems in geography.

GRG 379L Practicum: Internships in Applied Geography 3 Hours

Research and staff experience working in an appropriate government agency or private business.

GRG 380 Field Course in Geography 3 Hours

Collection of data, formulation of meaningful categories of regions, development of hypotheses of cause-and-effect relations through direct contact with the phenomena and processes in the area where a problem is located.

GRG 380C Myth, Ritual, Place, and Environment 3 Hours

Impact of local religious lore and practice on cultural landscapes, conservation, and sense of place; cultural and environmental consequences of the spatial expansion of world religions; other themes in the geography of religion, including civil religion and environmental theology.

GRG 380D Environment and Health in Latin America 3 Hours

Issues related to health, health care, and development in Latin America and the Caribbean, considered with the recognition that health depends on the interactions of social, economic, and political factors as well as on health care services.

GRG 380E Geomorphology of the Southwest 3 Hours

Geography of West Texas and New Mexico; late Cenozoic basalt flows, volcanic ashes, sand sheets, alluvium, paleolake deposits, glacial moraines, colluvium, and soils; integration of landforms and landscape ecology. Includes a ten-day field trip.

GRG 380F Field Techniques in Sediments and Soils 3 Hours

Designed to provide experience in field description of sediments and soils in Central Texas; second half of course focuses on field interpretation of geomorphology and landscape evolution using sedimentary deposits and soils.

GRG 381 Topics in Seminar in Historical Geography 3 Hours
Topics include Latin America, Anglo-America, Texas, boundaries, settlement origins and patterns, origins of agriculture.

GRG 381C Mapping the Middle East 3 Hours

Ways in which the Middle East is and has been represented cartographically. Cartographic representations of the region during the fifteenth and sixteenth centuries; the nature and evolution of a distinctive Islamic cartographic tradition; the role and use of maps during the nineteenth and twentieth centuries both in the extension of colonialism and in the creation of modern states; and the contemporary use, applications, and implications of geographic information systems in organizing and representing data spatially.

GRG 381D Soil Geomorphology 3 Hours

Examine three aspects of soil geomorphology: soil formation as it relates to earth surface processes, soils and sustainability, and soil ecosystem interactions.

GRG 382K Geo-Archaeology and Environmental History 3 Hours

Long-term ecology as reconstructed from settlement and land-use histories. Empirical case studies in environmental history from the Mediterranean region, the Near East, and Mesoamerica. Applications to degradation, desertification, sustainability, and global change.

GRG 383C Topics in Seminar in Environment and Development 3 Hours

A third- and fourth-world perspective on the geographic implications of international development; emphasis on local and global environmental effects.

GRG 383C.2 Environment and Development in the Middle East 3 Hours

GRG 383F Long-Term Climate Change and History 3 Hours

Climate and atmospheric science considered with long-term climate and historical and archaeological change over Earth history, focusing on the Quaternary to the future.

GRG 384C Watershed Systems and Environmental Management 3 Hours

The effect of landcover change on drainage basin processes, considered from a geomorphological perspective over varying temporal and spatial scales. Topics may include watershed management, stream channel restoration, fluvial geomorphic processes, and Geographic Information Systems applications to drainage basin processes.

GRG 385 Topics in Seminar in Regional Geography 3 Hours

GRG 385.1 Regional Geography of Latin America 3 Hours

Topics include land and life in Central America; culture, environment, and development in Latin America; recent trends in Latin American geography.

GRG 385.2 Europe 3 Hours

Topics include various aspects of the economic and political geography of individual nations or regions, such as regional differences in Southeast Europe, agricultural developments in European Community countries, trade, viability of individual countries, the changing resources picture in Western and Eastern Europe.

GRG 385.3 Anglo-America 3 Hours

Topics include agricultural patterns of the United States, comparative regional studies, measurement and delimitation of regions, analysis of population shifts.

GRG 385.4 Asia 3 Hours

Topics include economic regionalization in Asia, spatial structure of Asian manufacturing, regional discrimination analysis for selected areas and variables in Asia, urban structure in South Asia, developmental activity and spatial change in India.

GRG 385.5 Regional Geography of the Middle East and North Africa 3 Hours

Topics include developmental activity and spatial change in the Middle East, comparative regional studies.

GRG 385C Quaternary Landscapes 3 Hours

Changing physical and biotic landscapes on Ice Age earth during the past two million years. Reconstruction of Quaternary geomorphic landscapes based on principles and applications of geochronology and paleoclimatology.

GRG 385H Wetlands: Earth System Science and History 3 Hours

Biophysical, historical, and policy/restoration components of wetlands with global and regional case studies.

GRG 386C Topics in Seminar in Quaternary Studies 3 Hours

Issues and new developments in regional and global aspects of Quaternary climates, biota, prehistory, and landscape evolution.

GRG 387C Political Ecology 3 Hours

An introduction to the history of development theory, economic globalization, studies in the history of science, issues of social justice, and critical studies of environmental history.

GRG 387D Globalization, Conflict, and Resistance 3 Hours

Focuses on a theoretical and empirical understanding of the economic, cultural, political, and policy dimensions of globalization; study of the impact of globalization on people and places; understanding of class and identity conflicts using case studies from Latin America, the United States, Europe, Africa, the Middle East, and Asia; and exploration of theories of social movement with examples from the global North and South.

GRG 387K Geoarchaeology of Mesoamerica 3 Hours

Examine three areas of Mesoamerican geoarchaeology: regional environments, the lines of scientific evidence for current and past environments, and human-environmental interactions from the Pleistocene to the present.

GRG 388 Seminar in Resources and Conservation 3 Hours

Development of the conservation movement, problems of resource misuse, conservation practices, state and national conservation policies, nature and distribution of natural resources.

GRG 388C Indigenous Maps, Architecture, and Enculturation of Colonial Mexico 3 Hours

The encounter of Spanish and indigenous cultures and ecologies; regional diversity of agricultural, urban, and economic development from 1521 to 1810; ethnic transformation and new socioeconomic configurations.

GRG 388R Forest Hydrology 3 Hours

Traces the history of forest hydrology as a science that describes the natural complexities of water movement through forested headwater landscapes and the changes imposed to these processes by disturbances associated with extreme weather events, deforestation, timber harvesting, wildfires, and climate change.

GRG 389P Hydrogeomorphology 3 Hours

Hydrologic and geomorphologic applications to practical problems in physical geography, geology, civil engineering, ecology, and environmental sciences.

GRG 390 Cultural and Humanistic Geography 3 Hours

Analysis of human-environment interactions by employing the concepts of place, home, and dwelling. Discussion of humanistic and postmodern geographical research.

GRG 390C Landscape, Meaning, and Society 3 Hours

The creation, transformation, and meaning of landscapes within different societies through time. Iconographical analysis of the built environment; impress of belief and ideology on landscape; analysis of nationalistic and authoritarian landscapes; problems of defining and mapping ethnicity; civilizational process and behavior; institutional vandalism, place annihilation, and the destruction and effacement of landscape symbols; cultural and geographical foundations and unintended consequences of global economic integration.

GRG 390K Issues in Geography 3 Hours

Examines the history, philosophy, and ontology of geography, including its various subfields.

GRG 390L Research in Geography 3 Hours

Builds on topics explored in Geography 390K by focusing on epistemology and research in the field of geography. Students develop plans for research and write a research proposal.

GRG 390S Environment, Development, and Food Production 3 Hours

Assessment of various types of nonmechanized agriculture with regard to environmental factors and management techniques.

GRG 391C Dynamics of Earth Systems 3 Hours

An overview of climate, vegetation, soil, and landform processes. Principles and methodology of physical geography.

GRG 391M Multivariate Techniques in Spatial Analysis 3 Hours

The application of multivariate data analytic techniques including regression, factor, canonical, and discriminatory analysis of spatial problems.

GRG 392C The Anthropocene in the Longue Duree 3 Hours

Explore the "Anthropocene" (early to future) from the perspectives of multiple disciplines including geography, anthropology, archaeology, geology, and ecology. Discuss its drivers, its historical roots, and its chronologies.

GRG 192D Grant Writing in Geography 1 Hour

Designed to train students to write competitive and successful applications for extramural grants and fellowships.

GRG 392M Seminar in Biodiversity Conservation 3 Hours

Examines issues that involve the conservation and sustainable use of plants, animals, and ecosystems.

GRG 393C Seminar in Digital Landscapes 3 Hours

Explores the theoretical and applied issues associated with the acquisition, analysis, simulation, and visualization of digital geographic information, with an emphasis on current trends in landscape characterization, landscape ecology, biodiversity, global change, environmental remote sensing, and socio-ecological systems.

GRG 393D Geographical Information Systems and Ecological Modeling 3 Hours

Covers the steps involved in conceptualizing and formulating predictive models in a raster geographical information systems environment. Although many of the topics covered are fairly generic and can be applied to any application area in which raster data are used, species distribution models will be used as the example application area.

GRG 493K Research in Remote Sensing of the Environment 4 Hours

Imagery generated by remote sensors applied to research and problem solving in the physical and cultural environment.

GRG 493M Advanced Remote Sensing and Quantitative Landscape Ecology 4 Hours

Advanced digital image processing of optical satellite imagery for landscape composition and pattern analysis.

GRG 394 Seminar in Urban Analysis 3 Hours

Research seminar in urban issues: demographic, environmental, and transportation modeling; metropolitan finance; and urban social pathologies.

GRG 394F Feminist Geographies 3 Hours

Uses a feminist geographic lens to interrogate a range of historical and contemporary geopolitical and geoeconomic issues including (re)productive labor struggles, migration, development, globalization, colonialism, nationalism, militarization and transnational resistance movements.

GRG 394K Geographic Information Systems 3 Hours

An introduction to the design and use of geographic information systems and to computer-based tools used to store, manage, analyze, and display spatially referenced data.

GRG 394L Advanced Applications of Information Technology 3 Hours

Advanced issues in computer cartography, geographic information systems, three-dimensional environmental reconstruction and rendering, terrain modeling, animation of environmental processes, and hypertext and multimedia authoring. Interdisciplinary subjects, such as the application of geographic information systems to archaeological research, historical demography, and habitat mapping and analysis.

GRG 395 Cultural Adaptation and Change 3 Hours

A graduate-level introduction to cultural behavior, adaptation, evolution and transformation, with emphasis on demography, diffusion, migration, ethnicity, and institutions.

GRG 395D Latin American Cultures, Environment, and Development 3 Hours

Exploration through Latin American examples of issues of cultural identity and territory, adaptive strategies, environmental impact, conservation, cultural survival, parks and people, and sustainable development.

GRG 395K Getting and Staying Funded 3 Hours

Written, oral, and multi-media skills for improved success in academic and non-academic professional arenas including, but not limited to, grant and thesis proposal writing, CV and job application writing, audience-targeted formal and informal oral presentations, multimedia production (e.g., poster, video), and career timeline planning.

GRG 396 Techniques in Pollen Analysis 3 Hours

Field sampling, laboratory processing, microscopy, pollen grain morphology, pollen counting, and data-handling techniques.

GRG 396C Seminar in Current Geographic Research 3 Hours

Review and discussion of recent research projects across the field of geography; includes analysis of theories and methodologies, and various methods for presenting results.

GRG 396K Quaternary Palynology 3 Hours

Methods, principles, and applications of pollen analysis to vegetational, paleoenvironmental, and ethnobotanical reconstructions.

GRG 396T Topics in Geography 3 Hours

GRG 197, 297, 397 Conference Course in Geography 1-3 Hours

Supervised study and research.

GRG 698 Thesis 6 Hours

GRG 398R Master's Report 3 Hours

Preparation of a report to fulfill the requirement for the master's degree under the report option.

GRG 398T Supervised Teaching in Geography 3 Hours

Teaching under the close supervision of the course instructor; group meetings with the instructor, individual consultations, and reports throughout the teaching period.

GRG 399W, 699W, 999W Dissertation 3,6,9 Hours