

GEOG - Geography

GEOG 100S Human Geography (3 Credit Hours)

This course provides a basic topical introduction to human and cultural geography. It focuses on the diversity of human societies, their distribution, characteristics, and cultural impact on the landscape. Topics include the geography of population, migration, language, religion, economic development, urbanization, resources, and the political landscape.

GEOG 101S Environmental Geography (3 Credit Hours)

A geographical study of the diverse characteristics of the Earth's physical landscape, spatial distribution of environmental characteristics, the impacts of these on human populations and human populations' impact on the natural environment. Topics include climate and climate change, mass movements and natural hazards, biogeography and environmental problems such as desertification and deforestation, and the use and abuse of water resources.

GEOG 102T Digital Earth: Geospatial Technology and Society (3 Credit Hours)

This course provides an overview and exploration of: 1) the digital representation of the Earth and 2) geospatial science and technology. The course investigates geospatial technological innovations affecting the environment, resources, and society, including satellite global positioning systems, geographic information systems, and earth observations. Students develop hands-on skills as well as critical-thinking skills concerning the role of increasingly ubiquitous geospatial technology and their influences on social, economic, and human-environment interactions.

GEOG 126S Honors: Cultural Geography (3 Credit Hours)

Open only to students in the Honors College. A special honors section of GEOG 100S.

GEOG 250 World Regional Geography (3 Credit Hours)

A study of the physical and cultural characteristics of the major geographical regions of the world. The course focuses upon significant problems within each of the world's major regions and examines the relevance of the geographical background to these problems.

GEOG 295 Topics in Geography (3 Credit Hours)

A study of selective topics in Geography.

GEOG 296 Topics in Geography (3 Credit Hours)

A study of selective topics in Geography.

GEOG 300 Maps and Geographic Information (3 Credit Hours)

An investigation of different representations of the Earth: physical and cognitive maps, atlases, spatial databases, aerial photographs, and remote sensing imagery, with an emphasis on the use of geographic tools for communicating and analyzing information.

Prerequisites: GEOG 100S or GEOG 101S

GEOG 305 World Resources (3 Credit Hours)

A geographical analysis of the distribution and accessibility of the world's resources including population, agricultural land, biodiversity, water, renewable and nonrenewable materials, and energy sources.

Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 306T Hazards: Natural and Technological (3 Credit Hours)

An exploration of human perceptions of and responses to extreme geophysical and technological threats, including nuclear bombs and accidents, hurricanes, tornadoes, earthquakes, and volcanoes.

Prerequisites: junior standing and six credits in the social sciences or permission of the instructor

GEOG 308 Research Design (3 Credit Hours)

Covers the design and implementation of quantitative and qualitative methods of inquiry in social sciences.

Prerequisites: GEOG 100S or GEOG 101S

GEOG 310 Geography of the City (3 Credit Hours)

An analysis of the structure, growth, and development of cities. Topics include the use of urban land, location of public services, structure of the urban economy, social problems of urban populations, and decay and revitalization.

Prerequisites: Completion of General Education human behavior requirement

GEOG 320 Political Geography (3 Credit Hours)

A study of the relationship between geographical and political factors; the nation state and its subdivisions; interaction among states; and the political geography of everyday life.

Prerequisites: Completion of General Education human behavior requirement

GEOG 321 World Economic Geography (3 Credit Hours)

An analysis of differences in spatial patterns on the economic landscape at national and international levels, and the processes which create such differences. Introduces basic concepts, theories, and models in economic geography at the global scale.

Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 325 Ethnic Minorities (3 Credit Hours)

A study of ethnic minorities worldwide with emphasis on geographical dimensions of ethnic identity and relationships between ethnicity and territory, regionalism, politics, and cultural expression.

Prerequisites: Sophomore standing or permission of the instructor

GEOG 330 Field Methods (3 Credit Hours)

A review of selected techniques for generating data in a field situation. Lectures deal with the description and evaluation of techniques such as sampling methods, observation, interviewing, questionnaires, human relations skills and ethical considerations. The project component involves the definition of field problems and the application of appropriate techniques.

Prerequisites: Sophomore standing or permission of the instructor

GEOG 350 Geography of the United States and Canada (3 Credit Hours)

The human and physical geography of the United States and Canada with special emphasis on the distribution of population and natural resources, migration patterns, location of major economic activities, and the variety of regional identities within the U.S. and Canada.

Prerequisites: Junior standing and six credits in human behavior, or permission of the instructor

GEOG 355 Topics in Regional Geography (3 Credit Hours)

A study of selected regions or selected problems within a particular region of the world.

Prerequisites: Junior standing or permission of the instructor

GEOG 367 Cooperative Education (1-3 Credit Hours)

Student participation for credit based on the academic relevance of the work experience, criteria and evaluative procedures as formally determined by the department and Career Development Services prior to the semester in which the work experience is to take place.

Prerequisites: Approval by the department and Career Development Services

GEOG 368 Internship in Geography (1-12 Credit Hours)

Individualized practical experience in the area of applied geography. The credits will be commensurate with the level of the student's involvement.

Prerequisites: Twelve hours in geography

GEOG 370 Introduction to Emergency Management (3 Credit Hours)

Disasters in the U.S and abroad are examined to study the evolution of emergency practices. Factors contributing to the hazardousness of place and community vulnerability are explored. Emergency phases are practiced through interactive simulations.

Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 395 Topics in Geography (1-4 Credit Hours)

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors.

Prerequisites: Junior standing or permission of the instructor

GEOG 396 Topics in Geography (1-4 Credit Hours)

A study of selected topics designed for nonmajors, or for elective credit within a major. These courses will appear in the course schedule and will be more fully described in information distributed to all academic advisors.

Prerequisites: Junior standing or permission of the instructor

GEOG 398 Tutorial Work in Geography (1-3 Credit Hours)

Independent study under the direction of an instructor.

Prerequisites: Permission of the instructor

GEOG 400W/500 Seminar in Geography (3 Credit Hours)

Advanced study of a specialized topic in geography. The choice of the topic may vary according to the availability of faculty expertise and student interest. This is a writing intensive course. This course may be repeated once provided it is a different topic and with permission of the instructor.

Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C; GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 401/501 Global Environmental Policy (3 Credit Hours)

This course analyzes the causes, severity, potential consequences, and proposed solutions regarding global ecological issues with special attention to the scientific debate and the political and policy process. It examines environmental policies of national governments, regional/international organizations, and global conferences.

Prerequisites: GEOG 100S or GEOG 101S or GEOG 102T or POLS 100S or POLS 101S or POLS 102S or permission of the instructor

GEOG 402/502 Geographic Information Systems (3 Credit Hours)

A study of the conceptual basis of GIS as a tool for manipulating spatial information. The course focuses on how geographic information can be input and organized within the framework of a GIS. Students will work on a computer-based GIS to gain a greater understanding of spatial database structures and analytical operations.

Prerequisites: Junior standing, GEOG 102T, or permission of instructor

GEOG 404/504 Digital Techniques for Remote Sensing (3 Credit Hours)

Study of the theory and application of remote sensing, emphasizing environmental applications and aerial and satellite imagery. Covers the fundamentals of multispectral digital image processing, including sensors pre-processing, enhancement, classification, accuracy assessment, and GIS data integration.

Prerequisites: Junior standing, GEOG 102T, or permission of instructor

GEOG 405/505 Seminar in International Resource Management (3 Credit Hours)

Discussion of the ecological and management principles underlying international resource management and the goal of attaining a sustainable, ecologically balanced world.

Prerequisites: GEOG 100S or GEOG 101S; GEOG 305 recommended

GEOG 408/508 Cartography (3 Credit Hours)

Computer-assisted methods and techniques employed in the design, construction, and use of maps and other graphics as tools for data analysis and communication.

Prerequisites: GEOG 300 or GEOG 402

GEOG 409/509 Drone Applications Proseminar (3 Credit Hours)

Survey of the state-of-the-art geospatial applications of small Uncrewed Autonomous Systems (sUAS) mapping, surveying, and modeling. Course combines seminars spanning application sectors of research and professional practice; lectures on mission planning, operations, analysis and regulations; and hands-on practical exercises incorporating risk management, safety, ethics, and legal issues.

Prerequisites: GEOG 402 or permission of instructor

GEOG 410/510 Seminar in Urban Geography (3 Credit Hours)

Discussion of specific urban and metropolitan problems based on outside readings and individually selected research topics.

Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 411/511 Urban and Regional Planning (3 Credit Hours)

A study of planning concepts and principles used to guide contemporary metropolitan growth and development. Emphasis is on the application of planning tools and methods that guide the planning process from conception to execution.

Prerequisites: GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 412/512 Cities of the World (3 Credit Hours)

An examination of cities of the world's major cultural realms with an emphasis on the urban landscape as it varies between developed and developing countries.

Prerequisites: Junior standing or permission of the instructor

GEOG 417/517 GIS for Planning and Public Policy (3 Credit Hours)

Geographic Information Systems (GIS) and science are an essential tool for urban planners and policy makers who have special interests in places and who need this kind of knowledge for decision making. The purpose of this course is to teach students the foundations of GIS and how it is applied in urban planning and other related disciplines. The course combines lectures, discussion of readings, and hands-on exercises in the computer lab.

Prerequisites: GEOG 402 or permission of the instructor

GEOG 418 Quantitative Methods (3 Credit Hours)

A survey of and practicum in the basic techniques of quantitative research, including the logic of empirical research, the identification of data sources, and the use of appropriate statistical techniques.

Prerequisites: GEOG 100S or GEOG 101S, GEOG 308 with a grade of C- or better

Pre- or corequisite: STAT 130M with a grade of C- or better

GEOG 419/519 Spatial Analysis of Coastal Environments (3 Credit Hours)

The course integrates remotely sensed and field techniques for scientific investigation and practical management of coastal environmental systems. Spatial modeling of coastal processes and management tools using Geographic Information System (GIS).

Prerequisites: GEOG 300, GEOG 402 or GEOG 502, or permission of instructor

GEOG 420/520 Marine Geography (3 Credit Hours)

An analysis of the environmental geography and resources of the ocean, with particular emphasis on geospatial analysis of the seafloor, hydrography, climate change, fisheries, ocean pollution, maritime activity spaces and management.

Prerequisites: Junior standing and six credits in human behavior, or permission of the instructor

GEOG 422W/522 Coastal Geography (3 Credit Hours)

An examination of the physical and human geography of the coastal zone. Considers problems of managing coastal resources with an emphasis on North America. Lectures focus on coastal patterns, processes, and problems at the global, national, and local scales. Students investigate a section of the local coastline and write a report on the physical and human geography on the basis of field study, library, and internet research. This is a writing intensive course.

Prerequisites: GEOG 100S or GEOG 101S, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor

GEOG 424/524 Weather, Climate and Society (3 Credit Hours)

Weather and climate play a pivotal role in nearly every aspect of life. How does temperature relate to health outcomes? What impact does El Niño have on Peruvian farmers? How is the issue of climate change reflected in national security policy? Why? Topics also include the energy balance equation, remote sensing techniques, and climatological data acquisition and analysis. Beyond an understanding of the complex processes that dictate the flow of the atmosphere, the course analyzes the socioeconomic, political, and cultural perspectives of climate and weather. The course also provides a framework for stewardship and responsibility to the future.

Prerequisites: GEOG 100S, GEOG 101S, or permission of the instructor

GEOG 425/525 Internet Geographic Information Systems (3 Credit Hours)

Theoretical and practical exploration of methods, standards, and policies related to the development and utilization of geographic information systems on the Internet. Students will create and utilize distributed geospatial data and analytical systems using the WWW and the Internet to address geographical problems.

Prerequisites: GEOG 402

GEOG 432/532 Advanced GIS (3 Credit Hours)

The study of a series of advanced topics in the field of geographic information systems/science. Focus is placed on the development of projects/models and a survey of several advanced techniques. Students will work on a computer based GIS to implement topics from lectures.

Prerequisites: GEOG 402

GEOG 446/546 Geography, Gender, and Sexuality (3 Credit Hours)

This course examines gender identity and sexuality in all of their diverse forms through a lens of human geography, such as metaphors of space and place, the cultural landscape, and 'mapping territory.' Topics explored include global gender identities; 'queer space;' 'locating' gender and sexuality within the arts and tourism; the gendered citizen and the nation; and political economies of gender and sexuality.

Prerequisites: Junior standing, GEOG 100S or GEOG 101S, a grade of C or better in ENGL 211C, ENGL 221C, or ENGL 231C, or permission of the instructor

GEOG 451/551 Europe (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Europe.

Prerequisites: Junior standing and GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 452/552 Africa (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Africa.

Prerequisites: Junior standing and GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 453/553 Asia (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Asia excluding the Middle East and the former USSR.

Prerequisites: Junior standing and GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 454W/554 Latin America (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Latin America. This is a writing intensive course.

Prerequisites: Junior standing, GEOG 100S or GEOG 101S, a grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, or permission of the instructor

GEOG 455/555 The Middle East (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in the Middle East.

Prerequisites: Junior standing and GEOG 100S or GEOG 101S, or permission of the instructor

GEOG 458/558 Geography of Virginia (3 Credit Hours)

An analysis of Virginia's population, resources, and regional landscapes as they have been influenced by physical, cultural, historical, and economic factors.

Prerequisites: GEOG 100S or GEOG 101S

GEOG 460/560 Medical Geography (3 Credit Hours)

The course covers a range of topics in medical and health geography, including spatial behaviors of infectious disease and health care access. The focus of the course is on the geographical patterns of health and disease from the population rather than individual scale. In addition to seminar style lectures and discussions, the course enables students to further investigate by learning how to conduct medical/health geography research.

Prerequisites: Successful completion of the University's lower-division General Education requirement in Human Behavior, or permission of the instructor

GEOG 462/562 Advanced Spatial Analysis (3 Credit Hours)

This course introduces the essential theoretical concepts and analytical tools for analyzing spatial process, spatial autocorrelation, spatial patterns, techniques for spatial interpolation, network connectivity, big data, and landscape patterns. The course culminates with students carrying out their own spatial analysis projects. This course assumes that students understand the basic concepts in GIS with some experience in software operation of ArcGIS.

Prerequisites: GEOG 402 or permission of the instructor

GEOG 463/563 GIS Programming (3 Credit Hours)

This course develops students' GIS programming skills. Focus is placed on Python programming in ArcGIS and JavaScript in Web GIS development.

Prerequisites: GEOG 402

GEOG 464/564 Advanced Environmental Geography Seminar (3 Credit Hours)

The objective of the course is to provide students with a deeper understanding of the current concepts and debates in environmental geography. By exploring the ethical and philosophical foundations of the field, the course considers the environment's opportunities and constraints. While topics may include climate change, agricultural security, and renewable energy, the course will be driven by student-led discussions and participation. Critically thinking about complex phenomenon, the seminar will include various weekly readings, discussions, and writing assignments.

Prerequisites: GEOG 100S or GEOG 101S or permission of the instructor

GEOG 473/573 Geographic Information Systems for Emergency Management (3 Credit Hours)

Students will demonstrate advanced skills and techniques using spatial data to prevent, mitigate, respond to, and recover from intentional, natural, and accidental homeland security threats and emergencies. This course demonstrates the importance of rapidly disseminating spatial information towards the prevention and response of various organizations to homeland security events. This course will provide students with the tools and experience required to collect, prepare and manage spatial data and enable students to be prepared to map and analyze the data to quickly and effectively create a coordinated response to real homeland security events.

Prerequisites: GEOG 100S, GEOG 101S, GEOG 102T, or permission of the instructor

GEOG 475/575 Urban Resiliency (3 Credit Hours)

This course examines the multifaceted interface of built and natural environments and their impacts on land use management at spatial and temporal scales. It evaluates the impact of population pressure on sustainability through a survey of urban areas and analyzes urban planning and management capacities to maintain resilience despite environmental and technological hazards.

Prerequisites: GEOG 100S or GEOG 101S or permission of the instructor

GEOG 480W Senior Seminar in International Studies (3 Credit Hours)

Interdisciplinary research and the preparation of a senior thesis in international studies. This is a writing intensive course.

Prerequisites: A grade of C or better in ENGL 211C or ENGL 221C or ENGL 231C, senior standing in the BAIS degree program or permission of the instructor

GEOG 481 Geographic Inquiry and Professional Development (3 Credit Hours)

This course is designed to allow students to synthesize Geography concepts, theories, and knowledge and apply them to: 1) understand their positionality within the paradigms of the discipline, 2) explore future career paths, discover job possibilities, and graduate school opportunities in Geography, and 3) prepare materials (such as resumes and e-portfolios) to be used to apply for such positions.

Prerequisites: GEOG 100S OR GEOG 101S OR GEOG 102T

GEOG 490/590 Applied Cartography/GIS (1-3 Credit Hours)

Practical experience in applying the principles of cartography and geographical information systems to the design and construction of maps and other graphics.

Prerequisites: Junior standing or permission of the instructor

GEOG 495/595 Topics in Geography (1-4 Credit Hours)

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

Prerequisites: Appropriate survey course or permission of the instructor

GEOG 496/596 Topics in Geography (1-4 Credit Hours)

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to all academic advisors.

Prerequisites: Appropriate survey course or permission of the instructor

GEOG 497/597 Independent Research in Geography (1-3 Credit Hours)

Independent reading and study on a topic to be selected under the direction of the instructor. Conferences and papers as appropriate.

Prerequisites: Senior standing and approval of the director of geography

GEOG 498/598 Tutorial Work in Geography (1-3 Credit Hours)

Independent study under the direction of an instructor.

Prerequisites: Permission of instructor

GEOG 499 Senior Thesis (3 Credit Hours)

Completion of a research paper supervised by a faculty member from the Geography program. Research topic to be selected in concert with the faculty supervisor and a final written report required.

Prerequisites: GEOG 308 and senior standing in Geography

GEOG 500 Seminar in Geography (3 Credit Hours)

Advanced study of a specialized topic in geography. The choice of the topic may vary according to the availability of faculty expertise and student interest.

GEOG 501 Global Environmental Policy (3 Credit Hours)

This course analyzes the causes, severity, potential consequences, and proposed solutions regarding global ecological issues with special attention to the scientific debate and the political and policy process. It examines environmental policies of national governments, regional/international organizations and global conferences.

Prerequisites: GEOG 100S or GEOG 101S or GEOG 102T or POLS 100S or POLS 101S or POLS 102S or permission of the instructor

GEOG 502 Geographic Information Systems (3 Credit Hours)

A study of the conceptual basis of GIS as a tool for manipulating spatial information. The course focuses on how geographic information can be input and organized within the framework of a GIS. Students will work on a computer-based GIS to gain a greater understanding of spatial database structures and analytical operations.

Prerequisites: Junior standing, GEOG 102T, or permission of instructor

GEOG 504 Digital Techniques for Remote Sensing (3 Credit Hours)

Study of the theory and application of remote sensing, emphasizing environmental applications and aerial and satellite imagery. Covers the fundamentals of multispectral digital image processing, including sensors pre-processing, enhancement, classification, accuracy assessment, and GIS data integration.

Prerequisites: Junior standing, GEOG 102T, or permission of instructor

GEOG 505 Seminar in International Resource Management (3 Credit Hours)

Discussion of the ecological and management principles underlying international resource management and the goal of attaining a sustainable, ecologically balanced world.

GEOG 508 Cartography (3 Credit Hours)

Computer-assisted methods and techniques employed in the design, construction, and use of maps and other graphics as tools for data analysis and communication.

GEOG 509 Drone Applications Proseminar (3 Credit Hours)

Survey of the state-of-the-art geospatial applications of small Uncrewed Autonomous Systems (sUAS) mapping, surveying, and modeling. Course combines seminars spanning application sectors of research and professional practice; lectures on mission planning, operations, analysis and regulations; and hands-on practical exercises incorporating risk management, safety, ethics, and legal issues.

Prerequisites: GEOG 502 or permission of instructor

GEOG 510 Seminar in Urban Geography (3 Credit Hours)

Discussion of specific urban and metropolitan problems based on outside readings and individually selected research topics.

GEOG 511 Urban and Regional Planning (3 Credit Hours)

A study of planning concepts and principles used to guide contemporary metropolitan growth and development. Emphasis is on the application of planning tools and methods that guide the planning process from conception to execution.

GEOG 512 Cities of the World (3 Credit Hours)

An examination of cities of the world's major cultural realms with an emphasis on the urban landscape as it varies between developed and developing countries.

GEOG 517 GIS for Planning and Public Policy (3 Credit Hours)

Geographic Information Systems (GIS) and science are an essential tool for urban planners and policy makers who have special interests in places and who need this kind of knowledge for decision making. The purpose of this course is to teach students the foundations of GIS and how it is applied in urban planning and other related disciplines. The course combines lectures, discussion of readings, and hands-on exercises in the computer lab.

Prerequisites: GEOG 402 or GEOG 502 or permission of the instructor

GEOG 519 Spatial Analysis of Coastal Environments (3 Credit Hours)

The course integrates remotely sensed and field techniques for scientific investigation and practical management of coastal environmental systems. Spatial modeling of coastal processes and management tools using Geographic Information System (GIS).

Prerequisites: GEOG 300, GEOG 402 or GEOG 502, or permission of instructor

GEOG 520 Marine Geography (3 Credit Hours)

An analysis of the environmental geography and resources of the ocean, with particular emphasis on geospatial analysis of the seafloor, hydrography, climate change, fisheries, ocean pollution, maritime activity spaces and management.

GEOG 522 Coastal Geography (3 Credit Hours)

An examination of the physical and human geography of the coastal zone. Considers problems of managing coastal resources with an emphasis on North America. Lectures focus on coastal patterns, processes, and problems at the global, national, and local scales. Students investigate a section of the local coastline and write a report on the physical and human geography on the basis of field study, library, and internet research.

GEOG 524 Weather, Climate, and Society (3 Credit Hours)

Weather and climate play a pivotal role in nearly every aspect of life. How does temperature relate to health outcomes? What impact does El Niño have on Peruvian farmers? How is the issue of climate change reflected in national security policy? Why? Topics also include the energy balance equation, remote sensing techniques, and climatological data acquisition and analysis. Beyond an understanding of the complex processes that dictate the flow of the atmosphere, the course analyzes the socioeconomic, political, and cultural perspectives of climate and weather. The course also provides a framework for stewardship and responsibility to the future.

Prerequisites: GEOG 100S, 101S, or permission of the instructor

GEOG 525 Internet Geographic Information Systems (3 Credit Hours)

Theoretical and practical exploration of methods, standards, and policies related to the development and utilization of geographic information systems on the Internet. Students will create and utilize distributed geospatial data and analytical systems using the WWW and the Internet to address geographical problems.

Prerequisites: GEOG 502

GEOG 532 Advanced GIS (3 Credit Hours)

The study of a series of advanced topics in the field of geographic information systems/science. Focus is placed on the development of projects/models and a survey of several advanced techniques. Students will work on a computer based GIS to implement topics from lectures.

Prerequisites: GEOG 502

GEOG 546 Geography, Gender, and Sexuality (3 Credit Hours)

This course examines gender identity and sexuality in all of their diverse forms through a lens of human geography, such as metaphors of space and place, the cultural landscape, and 'mapping territory.' Topics explored include global gender identities; 'queer space'; 'locating' gender and sexuality within the arts and tourism; the gendered citizen and the nation; and political economies of gender and sexuality.

GEOG 551 Europe (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Europe.

GEOG 552 Africa (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Africa.

GEOG 553 Asia (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Asia excluding the Middle East and the former USSR.

GEOG 554 Latin America (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in Latin America.

GEOG 555 The Middle East (3 Credit Hours)

A geographical analysis of the interrelationships among physical, cultural, economic, and political factors in the Middle East.

GEOG 558 Geography of Virginia (3 Credit Hours)

An analysis of Virginia's population, resources, and regional landscapes as they have been influenced by physical, cultural, historical, and economic factors.

GEOG 560 Medical Geography (3 Credit Hours)

The course covers a range of topics in medical and health geography, including spatial behaviors of infectious disease and health care access. The focus of the course is on the geographical patterns of health and disease from the population rather than individual scale. In addition to seminar style lectures and discussions, the course enables students to further investigate by learning how to conduct medical/health geography research.

GEOG 562 Advanced Spatial Analysis (3 Credit Hours)

This course introduces the essential theoretical concepts and analytical tools for analyzing spatial process, spatial autocorrelation, spatial patterns, techniques for spatial interpolation, network connectivity, big data, and landscape patterns. The course culminates with students carrying out their own spatial analysis projects. This course assumes that students understand the basic concepts in GIS with some experience in software operation of ArcGIS.

Prerequisites: GEOG 402 or GEOG 502, or permission of the instructor

GEOG 563 GIS Programming (3 Credit Hours)

This course develops students' GIS programming skills. Focus is placed on Python programming in ArcGIS and JavaScript in Web GIS development.

Prerequisites: GEOG 402 or GEOG 600

GEOG 564 Advanced Environmental Geography Seminar (3 Credit Hours)

The objective of the course is to provide students with a deeper understanding of the current concepts and debates in environmental geography. By exploring the ethical and philosophical foundations of the field, the course considers the environment's opportunities and constraints. While topics may include climate change, agricultural security, and renewable energy, the course will be driven by student-led discussions and participation. Critically thinking about complex phenomenon, the seminar will include various weekly readings, discussions, and writing assignments.

GEOG 573 Geographic Information Systems for Emergency Management (3 Credit Hours)

Students will demonstrate advanced skills and techniques using spatial data to prevent, mitigate, respond to, and recover from intentional, natural, and accidental homeland security threats and emergencies. This course demonstrates the importance of rapidly disseminating spatial information towards the prevention and response of various organizations to homeland security events. This course will provide students with the tools and experience required to collect, prepare and manage spatial data and enable students to be prepared to map and analyze the data to quickly and effectively create a coordinated response to real homeland security events.

Prerequisites: GEOG 100S, GEOG 101S, GEOG 102T, or permission of the instructor

GEOG 575 Urban Resiliency (3 Credit Hours)

This course examines the multifaceted interface of built and natural environments and their impacts on land use management at spatial and temporal scales. It evaluates the impact of population pressure on sustainability through a survey of urban areas and analyzes urban planning and management capacities to maintain resilience despite environmental and technological hazards.

Prerequisites: GEOG 100S, 101S, or equivalent or permission of the instructor

GEOG 590 Applied Cartography/GIS (1-3 Credit Hours)

Practical experience in applying the principles of cartography and geographical information systems to the design and construction of maps and other graphics.

GEOG 595 Topics in Geography (1-4 Credit Hours)

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors.

GEOG 596 Topics in Geography (1-4 Credit Hours)

The advanced study of selected topics which, due to their specialized nature, may not be offered regularly. These courses will appear in the course schedule, and will be more fully described in information distributed to academic advisors.

GEOG 597 Independent Research in Geography (1-3 Credit Hours)

Independent reading and study on a topic to be selected under the direction of the instructor. Conferences and papers as appropriate.

GEOG 598 Tutorial Work in Geography (1-3 Credit Hours)

Independent research under the supervision of a faculty member.

GEOG 600 Geospatial Data Analysis (3 Credit Hours)

Course focuses on the fundamentals of geospatial data science. Students learn the key data models, structures, sources, and application of spatial analysis using GIS software, R, programming, and Earth observations.

GEOG 601 Spatial Statistics and Modeling (3 Credit Hours)

This course covers the foundations of spatial statistics and modeling. Emphasis is placed on point, linear and areal patterns, geostatistics, and model development for a variety of problems using multiple software packages.

GEOG 620 Seminar in Political Geography (3 Credit Hours)

A study of the interrelationships of political and geographic phenomena, and theories of geopolitics; examines in a seminar format the political geography both of specific topics such as the national integration of states, refugees and resources, and of particular regions of the world.

GEOG 668 Internship (1-6 Credit Hours)

Individualized practical experience.

GEOG 695 Selected Topics in Geography (1-3 Credit Hours)

Advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest.

GEOG 696 Selected Topics in Geography (1-3 Credit Hours)

Advanced study of selected topics designed to permit small groups of qualified students to work on subjects of mutual interest.

GEOG 697 Independent Research in Geography (1-3 Credit Hours)

Independent research in geography under the supervision of a faculty member.

GEOG 720 Cultural Geography Seminar (3 Credit Hours)

This seminar examines the field of cultural geography with: 1) an emphasis on theories and concepts developed over the past twenty years in 'new' cultural geography, and 2) cultural geography's emphasis on issues such as place, power, landscape and identity.