

# GEOGRAPHY AND ENVIRONMENTAL PLANNING (GEOG)

## Courses

### **GEOG 101 PHYSICAL GEOGRAPHY (3)**

Introductory spatial analysis of fundamental terrestrial natural phenomena, including their impact on humanity. Emphasis on Earth planetary motions, weather and climate, landforms, soils and vegetation. Core: Biological & Physical Sciences.

### **GEOG 102 WORLD REGIONAL GEOGRAPHY (3)**

Survey of world regions identifying geographical features and area and their significance. Core: Global Perspectives.

### **GEOG 105 GEOGRAPHY OF INTERNATIONAL AFFAIRS (3)**

An introductory survey of the changing political map of the world with special emphasis on a geographical comprehension of the major regions of international cooperation and conflict. Core: Global Perspectives.

### **GEOG 109 INTRODUCTION TO HUMAN GEOGRAPHY (3)**

Uses the analytical approach of social sciences in the study of institutions of human society to reveal spatial patterns in the responses of people to basic problems and needs. Core: Global Perspectives.

### **GEOG 201 ENVIRONMENT AND SOCIETY (3)**

Exploration of human-environment interrelationships in the social sciences. Core: Social & Behavioral Sciences.

### **GEOG 221 INTRODUCTION TO GEOSPATIAL TECHNOLOGY (3)**

Introduction to most effective ways to record and communicate spatial information. Emphasizes geotechniques including digital cartography, remote sensing, GIS and GPS. Includes georeference systems, cartographic representation, and basic skills needed to use and understand geospatial data.

### **GEOG 251 INTRODUCTION TO URBAN PLANNING (3)**

The sequential origins of planning and urban design, a study of contemporary urban planning practice, and an analysis of the social, economic and political context of plan formulation and implementation. Core: Metropolitan Perspectives.

### **GEOG 270 TOPICS IN PLANNING AND GEOGRAPHY (3)**

Investigation of various geographic and planning issues. Emphasis on analytical skills through readings and research design. Topics to be announced. May be repeated for a maximum of 6 units provided a different topic is covered.

### **GEOG 315 GEOMORPHOLOGY (4)**

Detailed analysis of the formation, surficial characteristics, and global distributions of the earth's landforms. Labs emphasize interpretation of landform assemblages through use of topographic maps and aerial photographs. Prerequisite: GEOG 101 or GEOL 121.

### **GEOG 317 ENERGY RESOURCES (3)**

Spatial patterns and political economy of conventional and alternative forms of energy production and use. Climate change and geopolitics of global energy transition.

### **GEOG 319 SOILS AND VEGETATION (3)**

A resource study of the world's soils and plant formations with emphasis placed upon their genesis and spatial differentiations. Prerequisite: GEOG 101.

### **GEOG 321 INTRODUCTION TO REMOTE SENSING AND PHOTOGRAMMETRY (3)**

Fundamentals and the development of remote sensing, the nature of the electromagnetic radiation and its interaction with the atmosphere and surface objects, photographic systems, aerial photography, and photogrammetry basics. Prerequisite: GEOG 221.

### **GEOG 322 INTRO TO GEOGRAPHIC INFORMATION SCIENCE (4)**

Study and use of selected computer hardware and software for the storage, retrieval, manipulation, analysis, and display of geographic data. Emphasis on practical applications of geographic information systems (GIS). Students who have successfully completed GEOG 232 will not receive additional credit for GEOG 322. Prerequisite: GEOG 221 or consent of instructor.

### **GEOG 323 CARTOGRAPHY AND GRAPHICS I (3)**

Study in design, construction, and effective application of maps and charts for analysis and publications; practical exercises in the use of cartographic tools, materials, and techniques. Prerequisite: GEOG 232 or consent of instructor.

### **GEOG 329 GEOGRAPHIES OF HEALTH (3)**

Interrelationship between health and our social and physical environments. Emphasis on geographic approaches to inequalities in health, well-being and care.

### **GEOG 350 GEOGRAPHY OF THE BLUES (3)**

The roles of the Blues and the sharecropping cotton economy in shaping the racial, sociopolitical and cultural landscapes of the Mississippi Delta.

### **GEOG 355 HISTORICAL GEOGRAPHY OF URBANIZATION (3)**

Spatial and temporal development of urbanization and urban morphology from the rise of civilization in the ancient Near East to the contemporary post industrial city. The entire scope of urban functions is surveyed, with the emphasis on the city as a human-made environment.

### **GEOG 357 CULTURAL GEOGRAPHY (3)**

Study of origins and diffusion of cultures and the resulting impact in creating the world's contrasting cultural landscapes.

### **GEOG 358 FEMINIST GEOGRAPHIES (3)**

Exploration of key works of feminist critique and of the geographies of women and gender; impact of feminism across the discipline of geography.

### **GEOG 359 ECONOMIC GEOGRAPHY (3)**

Designed to explain the location of economic activities through a series of principles and theories. Emphasis is on the various sectors of the economy, transportation, and economic development.

### **GEOG 360 GEOGRAPHY OF HUMAN MIGRATION (3)**

Comparative contemporary and historical migration patterns, analysis of migration causes and effects.

### **GEOG 373 CLIMATOLOGY (3)**

Analysis of the character, causes, and global distribution of climatic types, chiefly employing the Koppen classification system.

**GEOG 375 QUANTITATIVE METHODS IN GEOGRAPHY (3)**

Focus on statistical problems associated with the analysis of geographic data. Emphasis on the unique spatial problems of point pattern analysis, area association, and regionalization. Prerequisite: MATH 100 or higher (except MATH 204).

**GEOG 376 QUALITATIVE METHODS IN GEOGRAPHY (3)**

Introduction to qualitative methods. Research design, ethical and procedural considerations, data collection methods, data analysis.

**GEOG 377 METEOROLOGY (3)**

Examines the composition and structure of the atmosphere, thermodynamic processes, forces and related small- and large-scale motions, air masses, fronts, tropical cyclones, solar and terrestrial radiation, general circulation and weather forecasting. Field work may be required.

**GEOG 381 POLITICAL GEOGRAPHY (3)**

Effect of political groupings upon human use of the world, and the influence of the geographic base upon political power.

**GEOG 383 NATURAL RESOURCES AND SOCIETY: A GEOGRAPHIC PERSPECTIVE (3)**

Social and environmental dimensions of natural resources, their management, and misuse from a geographic perspective. Requires grade of C or better to fulfill Core requirement. Prerequisite: ENGL 102 or ENGL 190 or equivalent. Core: Advanced Writing Seminar.

**GEOG 385 POPULATION GEOGRAPHY (3)**

General population theory, data sources for population geographers, and the processes of fertility, mortality, and migration. Patterns of population growth and change viewed from both temporal and geographical perspectives.

**GEOG 391 URBAN SYSTEMS (3)**

Survey of the structure, functions, forms and development of urban units. Emphasis upon the locational features of social, economic, and cultural phenomena. Field work.

**GEOG 393 TRANSPORTATION AND INFRASTRUCTURE PLANNING (3)**

Transportation, water supply, wastewater treatment, and solid waste management systems, their role in the growth and development of urban areas. Policies, programs, and infrastructure planning.

**GEOG 401 GROWTH OF GEOGRAPHIC THOUGHT (3)**

History, nature, and methodology of geography as a discipline. Analysis of schools of geographic thought; critical evaluation of important geographic work, skills of written, visual, and oral presentation. Requires grade of C or better to fulfill Core requirement. Prerequisites: ENGL 102 or ENGL 190 or equivalent, and junior standing. Core: Advanced Writing Seminar.

**GEOG 402 PLANNING FOR RESILIENT COMMUNITIES (3)**

Examination of risks and vulnerabilities in hazard-prone areas, focusing on strategies for community resilience. Topics include resilience as a process and outcome, risk management, governance, and social-political factors in disaster planning. Prerequisite: GEOG 251 or consent of instructor.

**GEOG 403 URBAN HOUSING JUSTICE (3)**

Urban housing inequity in the U.S. Origins of racialized housing disparities. Informal exclusionary zoning. Alternative ways forward towards housing justice. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 403.

**GEOG 404 SECURITIZING THE CITY (3)**

Exploration of urban security at multiple scales including international, national, metropolitan region, city block, the home, and the human body.

**GEOG 405 COMPREHENSIVE PLANNING (3)**

The integration of separate urban systems into the comprehensive design of an urban region. Special emphasis will be placed on neighborhood, community and town planning. Fieldwork may be required. Prerequisite: GEOG 251 or GEOG 391.

**GEOG 406 PLANNING FOR URBAN CLIMATE CHANGE (3)**

Examination of vulnerability, adaptation, and resilience to climate change in urban sites. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 406. Prerequisites: GEOG 251, GEOG 391, GEOG 419, MTR 101, or consent of instructor.

**GEOG 408 APPLICATION OF GIS IN EMERGENCY MANAGEMENT (3)**

Application of geographic information systems in emergency management. Geospatial Concept-of-Operations (GeoCONOPS), Geospatial Information Infrastructure (GII), National Incident Management System (NIMS), the Incident Command System (ICS), the National Preparedness Goal mission areas. Prerequisite: GEOG 232.

**GEOG 409 APPLIED CLIMATOLOGY (3)**

The effects of world climatic patterns on the human and physical environment are analyzed. Special emphasis is devoted to the interactions between climate and the urban environment.

**GEOG 410 ENVIRONMENTAL GEOGRAPHY (3)**

Human impact on the natural environment. Exploration of roots and nature of contemporary environmental issues. Prerequisite: GEOG 101.

**GEOG 411 STUDIES IN NATURAL HAZARDS (3)**

The nature, frequency of occurrences, and distribution of environmental hazards and their impact on humans.

**GEOG 412 GEOGRAPHIES OF CONSUMPTION AND WASTE (3)**

Introduction to geographic relationships associated with contemporary consumption and waste disposal activities. Prerequisite: ENGL 102 or ENGL 190, or equivalent.

**GEOG 413 SEVERE AND HAZARDOUS WEATHER (3)**

Extreme atmospheric events and phenomena; case study analysis of atmospheric events that shaped history, geography, and environment; scientific explanation of extreme atmospheric event occurrence. Prerequisite: GEOG 101.

**GEOG 414 GIS APPLICATIONS (3)**

Vector-based GIS software for solving real world problems. Prerequisite: GEOG 232 or consent of instructor.

**GEOG 416 ADVANCED REMOTE SENSING: DIGITAL IMAGE PROCESSING AND ANALYSIS (3)**

Remote sensing platforms and sensors, remotely sensed data collection, field measurements, and the processing and analysis of various types of remotely sensed digital imagery. Prerequisite: GEOG 321.

### **GEOG 417 OUTDOOR RECREATION AND PLANNING MANAGEMENT (3)**

A study of outdoor recreation in terms of relationships between people, land, and leisure. Emphasis on the principles of planning, designing and maintaining outdoor recreation areas and facilities.

### **GEOG 419 CLIMATE CHANGE: SCIENCE TO POLICY (3)**

A survey of past, current, and future climate change. Emphasis on Earth's radiation balance, causes of climate change, observed and predicted signals of climate change, and impacts and mitigation of climate change.

### **GEOG 420 GEOGRAPHY OF THE UNITED STATES AND CANADA (3)**

Physical and cultural landscapes of the United States and Canada, including patterns of economic development of each region and their relationship to their environmental setting.

### **GEOG 423 GEOGRAPHY OF MARYLAND (3)**

Physical and human geographical elements of the Maryland landscape which explain current patterns and environmental problems. Particular emphasis on historical geographical background of the present landscape.

### **GEOG 426 GIS DATABASE DESIGN (3)**

Introduction to Geographic Information System (GIS) databases. System design, database design and implementation. Data requirements gathering and design principles. Prerequisite: GEOG 232.

### **GEOG 427 THE GLOBAL ECONOMY (3)**

Geographical patterns of spatial interactions in the global economy; roles of the state, transnational corporations, and intergovernmental organization. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 428 PYTHON SCRIPTING FOR ARCGIS (3)**

Python programming and scripting techniques for GIS. Fundamentals of Python, basic geoprocessing in GIS, key modules of ArcPy for mapping and spatial analysis, skills required to design script tools for ArcGIS. Prerequisites: GEOG 232 or equivalent skills, or instructor consent; GEOG 414 recommended.

### **GEOG 431 GEOGRAPHY OF AFRICA (3)**

A systematic and regional approach to the study of people and environment of Africa, south of the Sahara. Special focus is placed on the distribution of natural resources and the historical-political development of each country as important background for the understanding of current African affairs. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 443 GEOGRAPHY OF EAST ASIA (3)**

Regional studies of the physical and cultural foundations in China, Japan, and Korea. Emphasis upon human and economic resources, and role in world affairs. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 444 GEOGRAPHY OF SOUTH ASIA (3)**

Survey of the physical and cultural geographies of Pakistan, India, Bangladesh, Nepal, Bhutan, Sri Lanka and the Maldives. Thematic and regional approaches are applied in the study of the cultures, politics, environments, social structures, and economies of the South Asian Subcontinent.

### **GEOG 445 GEOGRAPHY OF SOUTHEAST ASIA (3)**

Regional analysis of Southeast Asia: physical geography, historical evolution, industry and agriculture, social and cultural factors, and role in world affairs. Problems of nationality, economic development, gender and cultural conflicts.

### **GEOG 447 GEOGRAPHY OF THE MIDDLE EAST (3)**

Analysis of Southwest Asia and North Africa, including major natural and cultural resources, related patterns of spatial organization, economic and political development, and associated problems.

### **GEOG 451 GEOGRAPHY OF EUROPE (3)**

Regional analysis and appraisal of the human geography and natural resources of Europe. Problems of nationality, economic development, and cultural conflicts. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 453 GEOGRAPHY OF RUSSIA (3)**

Diverse human and physical geographical aspects of Russia's complex historical and contemporary development and its relationships with its neighbors. The interrelationships between people and their environments - physical, social, economic, political, demographic, and cultural - are considered. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 454 RETHINKING BRAZIL (3)**

Regional analysis of Brazil: human and physical geography, historical perspectives, humanities, cultural geography, and critical thinking of Brazil in its role as regional and global participant. Perspectives on the problematization of national, racial, and regional identities, and of historical legacies upon Brazil today. Prerequisite: GEOG 102 or GEOG 105 or GEOG 109.

### **GEOG 461 GEOGRAPHY OF LATIN AMERICA (3)**

Analysis of Latin America focuses on the interrelationships between physical and cultural elements which provide a diversity of human habitats throughout the region. May be repeated for a maximum of 6 units. Prerequisite: 6 units of geography or consent of instructor.

### **GEOG 462 THE TWO DOWN-UNDERS: GEOGRAPHIES OF AUSTRALIA AND AOTEAROA-NEW ZEALAND (3)**

Analysis of the physical and cultural landscapes of Australia and Aotearoa/New Zealand, including patterns of settlement and economic development and the relationship of these patterns to their environmental settings. Emphasis on the historical backgrounds of these countries' present landscapes. Prerequisites: 6 units of Geography or consent of the instructor.

### **GEOG 463 THE SILK ROAD: THE GEOGRAPHIES OF CENTRAL EURASIA (3)**

Central Asian geographies and histories in the context of the extended Silk Road Region; its cultural identities, political economies, and ideological struggles; the bonds and interactions of the emerging nations of Central Asia with Russia, the U.S., China, Turkey, and Iran. Prerequisite: junior standing.

### **GEOG 465 ADVANCED TECHNIQUES IN GIS (3)**

Project-based learning within the spatial framework of GIS. Emphasis on advanced GIS techniques for spatial analysis and on quantifying geographic patterns and relationships. Prerequisite: GEOG 232.

### **GEOG 466 WEB GIS (3)**

Project-based learning within the spatial framework of web GIS applications. Emphasis on designing, developing, and deploying web-based GIS solutions online. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 466. Prerequisite: GEOG 232 or consent of instructor.

**GEOG 467 ENVIRONMENTAL HYDROLOGY (3)**

Exploration of the water cycle and its interaction with human society. Examination of precipitation, infiltration, runoff, and stream hydrology. Introduction to storm water mitigation, flood control, sanitary sewerage, and stream restoration. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 467. Prerequisites: GEOG 101 or GEOL 121 or consent of department.

**GEOG 468 FLUVIAL GEOMORPHOLOGY (3)**

Introduction to the study of river land forms and the processes that create them. Emphasis on human impacts to river systems and applied geomorphology. This course has been offered as a special topic; students who have earned credit for this course as a special topic will not receive additional credit for GEOG 468. Prerequisites: GEOG 101 or GEOL 121 or consent of department.

**GEOG 469 CLIMATE & HEALTH (3)**

Survey of climate and health relationships, processes, and methodologies. Emphasis on acute impacts such as heatwaves and extreme weather to chronic conditions associated with air pollution, changing vector ecology, and food security.

**GEOG 470 SPECIAL TOPICS IN GEOGRAPHY (1-3)**

Reading and research in selected topics in the field of geography. Seminar topics will be announced. May be repeated provided a different topic is taken each time.

**GEOG 471 GEOSPATIAL TECHNOLOGIES SPECIAL TOPICS (1-3)**

Reading and research in selected geospatial technological topics in the field of geography. Seminar topics will be announced. May be repeated for a maximum of 6 units provided a different topic is covered. Prerequisite: GEOG 232.

**GEOG 472 SPECIAL TOPICS IN SPACE AND SOCIETY (1-3)**

Reading and research in selected topics in the field of geography. Seminar topics will be announced. May be repeated for a maximum of 6 units provided a different topic is covered.

**GEOG 473 SPECIAL TOPICS IN ENVIRONMENTAL SYSTEMS AND SUSTAINABILITY (1-3)**

Reading and research in selected topics in the field of geography. Seminar topics will be announced. May be repeated for a maximum of 6 units provided a different topic is covered.

**GEOG 481 ENVIRONMENTAL IMPACT ANALYSIS (3)**

The collection, collation, analysis, and incorporation of physical, social, biological, and economic information for the reviewing and the preparing of environmental impact statement (EIS) reports. Prerequisite: 6 units of geography or consent of instructor.

**GEOG 484 LAND USE PLANNING (3)**

Contemporary land use planning, emphasizing the problematic nature of land development, the environmental land use planning process, and related growth management, issues and techniques. Prerequisite: GEOG 251 or consent of instructor.

**GEOG 491 GEOGRAPHY/ENVIRONMENTAL PLANNING INTERSHIP (1-6)**

Supervised placement and research in selected public and private agencies at appropriate institutions. May be repeated for a maximum of 6 units. Prerequisite: 6 units of geography and consent of department chair.

**GEOG 493 FIELD GEOGRAPHY (2-6)**

Practical laboratory experience in techniques in the collection and analysis of data by observations, measurements, mapping, and photographic records. Such techniques are to be applied to selected geographic problems. Prerequisite: 6 units of geography or consent of instructor.

**GEOG 494 TRAVEL AND STUDY (3-6)**

Countries and topics to be selected by departments and instructors sponsoring the program. For complete information, contact the chair of the department. May be repeated for a maximum of 6 units.

**GEOG 495 DIRECTED READINGS IN GEOGRAPHY (3)**

Independent reading in selected areas of geography. Open by invitation of the Geography Department to students taking a major or minor in geography. May be repeated for a maximum of 6 units.

**GEOG 496 INDEPENDENT STUDY IN GEOGRAPHY (1-6)**

Independent research, study, or field experience under supervision of a member of the Geography faculty. Designed for advanced students who wish to conduct independent investigations on aspects of Geography which are of special interest or not covered in other courses. Registration arranged with department chairperson. May be repeated for a maximum of 6 units. Prerequisite: advanced undergraduate standing with at least 18 units of geography or graduate standing.

**GEOG 498 HONORS DIRECTED READINGS (3)**

Independent reading in Geography and related disciplines on a topic selected by the student in consultation with the instructor(s). May be repeated for a maximum of six units. Prerequisite: permission of the department chairperson.

**GEOG 499 HONORS THESIS IN GEOGRAPHY (1-6)**

Researching and writing of a thesis, to be directed by a faculty member in a chosen area of specialization. May be repeated for a maximum of 6 units. Prerequisite: permission of the department chairperson.