

GEOGRAPHY (GEOG)

GEOG Class Schedule (<https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/GEOG>)

Courses

GEOG 100 Introduction to Meteorology credit: 3 Hours.

Same as ATMS 100. See ATMS 100.

This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

GEOG 101 Global Development&Environment credit: 3 Hours.

Introduces geographical perspectives on environment and development studies with case studies drawn from Africa, Asia, and Latin America.

Investigates the origins of the global South in relation to the global North, especially the historical and contemporary processes driving environmental, economic, and cultural change.

This course satisfies the General Education Criteria for:
Cultural Studies - Non-West
Social Beh Sci - Soc Sci

GEOG 103 Earth's Physical Systems credit: 4 Hours.

A basic introduction to the environmental systems of the Earth's surface, including landforms, soils, and ecosystems and how these systems are affected by global change. Emphasizes the importance of human-Earth relations and a holistic view of environmental systems. Same as ESE 103.

This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

GEOG 104 Social and Cultural Geography credit: 4 Hours.

Introduces the basic concepts of social and cultural geography, and the application of these concepts to a variety of topics; mental maps, territoriality, cultural regions, cultural elements and their diffusion, population movement and migration, settlement patterns, environmental hazards, and spatial patterns of social problems.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 105 The Digital Earth credit: 3 Hours.

Geospatial technologies such as global positioning systems (GPS) and geographic information systems (GIS) are becoming increasingly important tools in research and policy arenas and in everyday life. This course will provide an introduction to these emerging technologies and to the principles of mapping science that underpin them. At the same time, the course will explore how these innovative technologies are changing the spaces and places around us, including how we interact with the environment and each other. Lab exercises provide hands-on experience in collecting and mapping geospatial information, interpreting digital imagery and the Earth's environments, and critically thinking about the social implications of the digital Earth.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 106 Geographies of Globalization credit: 3 Hours.

A survey of major world regions by systematically considering five themes: environment, population and settlement patterns, cultural coherence and diversity, geopolitical fragmentation and unity, and economic and social development. While examining the persistence of unique regions, the course will both scale up to global linkages and scale down to place-specific impacts of globalization processes. Same as ESE 106. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.

This course satisfies the General Education Criteria for:
Cultural Studies - Non-West
Social Beh Sci - Soc Sci
Cultural Studies - Western

GEOG 198 Freshman Honors Seminar credit: 3 Hours.

Through discussions and research projects, the seminar is designed to provide an in-depth understanding of topics in the field of systematic or regional geography which are selected for group study. Appropriate geographic methodology is emphasized. Prerequisite: James Scholar standing or other designation as a superior student.

GEOG 199 Undergraduate Open Seminar credit: 1 to 5 Hours.

May be repeated.

GEOG 204 Cities of the World credit: 3 Hours.

In-depth exploration of global urbanization. Using a comparative regional approach, discuss the recent history of global urbanization, dissect its problems, and offer possible solutions. Approximately ten major regions of the world will be examined, exploring the significant urban patterns and processes, built and natural environments, and social, economic, and cultural landscapes of each.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci
Cultural Studies - Western

GEOG 205 Business Location Decisions credit: 3 Hours.

Analyzes location decision-making emphasizing industrial and commercial location patterns; identifies important institutional factors and their changing roles over the recent past; and focuses on plant closings, economic disruptions, and problems of structural change. Same as BADM 205. Prerequisite: ECON 102 or ECON 103, or equivalent.

GEOG 210 Social & Environmental Issues credit: 3 Hours.

Introduction to the complex relationship between people and the natural environment from a social science perspective. Explores different approaches to environmental issues, and examines the role of population change, political economy, technologies, environmental policymaking, and social institutions in causing and resolving contemporary social and environmental global issues. Same as ESE 210.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 215 Resource Conflicts credit: 3 Hours.

Geographic concepts of place, scale, region, and territoriality are used to explore the causes and consequences of competition for the control of natural resources. Situations that lead to violent conflict are discussed as well as mechanisms for the peaceful resolution of resource conflicts. Resources discussed include oil, water, access to land, and the impact of climate change. Same as ESE 215 and GLOBL 215.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 221 Geographies of Global Conflict credit: 3 Hours.

Focuses on contemporary cultural conflicts, competition among nations for economic and mineral resources; treats territorial disputes from a cultural and geographic perspective. Case studies vary to illustrate types of contemporary conflicts. Same as GLBL 221. Credit is not given for GEOG 221 and GEOG 110.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 222 Big Rivers of the World credit: 3 Hours.

An interdisciplinary approach to the study of big rivers, encompassing geomorphology, engineering, ecology, risk assessment and planning. Commencing with an assessment of the nature of big rivers; their hydrology and geomorphic setting; hazards associated with large rivers, and issues of river impoundment and management, then proceed to examine the geography, geomorphology, and ecology and management of a range of the World's greatest rivers, focusing on how a geomorphological understanding of such large rivers can aid study of riverine ecohabitats and inform decisions regarding water usage and engineering management. If the weather permits, a one day field-trip will be organized in the second half of the course to view aspects of a local river in Illinois/Indiana. Same as ESE 222.

GEOG 224 Geog Patterns of Illinois credit: 3 Hours.

Systematic analysis of the environmental and human processes that have shaped the regional landscapes of rural and urban Illinois.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

GEOG 254 American People, Places, & Environments credit: 3 Hours.

Regional geography survey of the U.S., including physical settings, cultural and economic patterns, and human-environment relationships. Topics include spatial patterns of settlement and migration, uneven vulnerability to natural hazards, and cultural diversity as seen in the landscape, with an overall focus on how human and physical geography together shape the American environment across different regions. Same as ESE 254.

GEOG 280 Intro to Social Statistics credit: 4 Hours.

Same as SOC 280. See SOC 280.

This course satisfies the General Education Criteria for:
Quantitative Reasoning I

GEOG 287 Environment and Society credit: 3 Hours.

Same as ESE 287, NRES 287, PS 273 and SOC 287. See NRES 287.

This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci
Cultural Studies - Western

GEOG 310 Political Geography credit: 3 Hours.

Problems and issues surrounding the geographic distribution of political actions and outcomes in the context of globalization. Topics include war and peace, access to natural resources, nationalism, democratization, terrorism, and the politics of identity. Prerequisite: Junior standing or consent of instructor.

GEOG 350 Sustainability and the City credit: 3 Hours.

Examination of the tools, techniques, strategies, and rationales that can be used by urbanists to produce and sustain a productive, fair, and equitable city. Emphasis is placed on diagnosing, implementing, and sustaining an ideal U.S. city as a complex whole that embeds an array of interconnecting parts (neighborhoods, retail districts, downtowns, city economies). Lectures and discussion cover the broad background of theories, concepts, and principles that will be essential for imagining and implementing these ideals, strategies and plans.) Same as ESE 350.

GEOG 356 Sustainable Development in South Asia credit: 3 Hours.

Examination of sustainable development in the region of South Asia (India, Nepal, Pakistan, Afghanistan, Bangladesh, Sri Lanka). Geographic analysis of development processes since the colonial period, with particular emphasis on the interrelated processes of environment, society, and politics as related to sustainability. Prerequisite: Sophomore standing or consent of instructor.

GEOG 370 Water Planet, Water Crisis credit: 3 Hours.

Same as ESE 320 and GEOL 370. See ESE 320.

GEOG 371 Spatial Analysis credit: 4 Hours.

Overview of the spatial analysis (nomothetic) approach to geographic research, both physical and human; includes discussion of the scientific method, with explanations and uses of analytic geographic concepts in studying real world problems. Prerequisite: A course in geography.

This course satisfies the General Education Criteria for:
Quantitative Reasoning II

GEOG 373 Geography Field Course credit: 1 to 4 Hours.

Field observation and mapping of human and/or physical phenomena using basic geographic field techniques, including pre- and post-trip meetings. Required field trip. Additional fees may apply. See Class Schedule. May be repeated if topics vary. Prerequisite: Major or minor in Geography & GIS, or consent of instructor.

GEOG 379 Intro to GIS Systems credit: 4 Hours.

Investigates the fundamentals of geographic information science as well as the basic skills in the execution of that theoretical knowledge with industry standard software packages. Student will learn the basics of projections and coordinate systems, how geographic information is stored and manipulated, and the theory and practice behind the production of thematic maps. Includes lecture and hands-on laboratory components. Same as ESE 379.

GEOG 380 GIS II: Spatial Prob Solving credit: 4 Hours.

Study of the analytical capabilities of geographic information systems with an emphasis on learning to solve spatial problems in both the vector and raster data formats. Students will develop the skills necessary to answer questions or solve problems in their areas of interest, with particular emphasis on problems and questions that require multiple steps to resolve. Students will learn the fundamental theory behind spatial problem solving, but also learn to execute these procedures with industry-standard software packages. Thus, this class contains both lecture/discussion elements and hands-on laboratory work. Same as ESE 380. Prerequisite: GEOG 379

This course satisfies the General Education Criteria for:
Quantitative Reasoning II

GEOG 381 Environmental Perspectives credit: 3 Hours.

Focus on the major ideas in contemporary environmentalism, especially on how humans do and should interact with the environment. Same as ESE 381. Prerequisite: Junior or senior undergraduate standing.

GEOG 384 Population Geography credit: 3 Hours.

Problems and issues surrounding the geographic distribution of populations at the world, regional, and local levels; emphasizes problems associated with population growth and decline, recent population redistribution, births and deaths, and elderly and minority populations.

GEOG 390 Individual Study credit: 2 to 4 Hours.

Supervised independent study of special topics or regions. May be repeated once. Prerequisite: Junior standing; at least one formal course in the topic or region of interest; consent of instructor.

GEOG 391 Honors Individual Study credit: 2 to 4 Hours.

Individual study and research projects for students who are working toward the degree with distinction in geography. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing; consent of honors adviser.

GEOG 392 Geography & GIS Internship credit: 0 to 3 Hours.

Supervised, off-campus experience in a field directly pertaining to Geography and/or GIS. A written report is required at the end of the internship relating work accomplishments to the student's program of study. Approved for Letter and S/U grading. May be repeated in separate terms up to 6 hours. Prerequisite: Consent of faculty sponsor and Director of Undergraduate Studies; at least two courses taken within Geography & GIS.

GEOG 394 Special Topics Social Geog credit: 4 Hours.

Introduction to current research in social geography; includes such topics as access to public facilities, geography of crime, innovation diffusion, geography of communications, spatial assimilation of minorities, and geography of social well-being. See Schedule for current topics. May be repeated.

GEOG 401 Watershed Hydrology credit: 3 Hours.

Same as NRES 401. See NRES 401.

GEOG 406 Fluvial Geomorphology credit: 4 Hours.

Systematic overview of the forms and processes associated with rivers and drainage basins; topics include basin hydrology, drainage networks, river hydraulics, sediment transport processes, channel morphology, channel change, and human impacts on fluvial systems. Same as GEOL 406, and NRES 406. 4 undergraduate hours. 4 graduate hours. Prerequisite: PHYS 101, and GEOG 103 or GEOL 107, or consent of instructor.

GEOG 408 Humans and River Systems credit: 4 Hours.

Systematic analysis of the biophysical processes operating in rivers and watersheds and the interaction of humans on these processes. The course will emphasize the importance of biophysical processes and human interaction with these processes in river and watershed management. Class discussion and a class project will focus on analysis of practical river and watershed problems. 4 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 103 or an introductory course in earth or environmental science.

GEOG 410 Green Development credit: 4 Hours.

Theory and practice of sustainable development. Course materials draw upon theoretical and case study material from the social and natural sciences to analyze environment and development relations with emphasis on the Global South. Same as ESE 410. 4 undergraduate hours. 4 graduate hours.

GEOG 412 Geospatial Tech & Society credit: 3 Hours.

Examines the use of geographic information systems (GIS), geographical positioning systems (GPS), and other geospatial technologies in everyday life with emphasis on their implications for social, economic, and environmental change. Topics include critical cartography, GIS, and social theory, crime and health, environmental justice, feminism, economic development and environmental change. 3 undergraduate hours. 3 graduate hours. Prerequisite: GEOG 105 or consent of instructor.

GEOG 421 Earth Systems Modeling credit: 4 Hours.

Same as ATMS 421, ESE 421, GEOL 481 and NRES 422. See ATMS 421.

GEOG 423 Politics of International Conservation and Development credit: 3 Hours.

Same as NRES 423. See NRES 423.

GEOG 436 Biogeography credit: 3 Hours.

Same as ANTH 436, ESE 439, IB 439 and NRES 441. See IB 439.

GEOG 438 Geography of Health Care credit: 3 or 4 Hours.

Methods and perspectives of health care. Emphasizing the spatial analysis of health and health care. The organization, provision and competition of health care will be highlighted. Same as SOC 478. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 384 or SOC 274 or consent of instructor.

GEOG 439 Health Applications of GIS credit: 3 Hours.

Same as CHLH 439 and PATH 439. See PATH 439.

GEOG 440 Business Applications of GIS credit: 3 or 4 Hours.

Design and implementation of GIS for business and strategic planning applications. Course goals include: (1) provide students with an understanding of Geographic Information Systems; (2) provide students with an understanding of how GIS can be applied in various business applications; (3) familiarize students with GIS and modeling techniques; (4) provide students with opportunities to work with various data sources through a project related to their own interest in business. Same as BADM 440. 3 undergraduate hours. 4 graduate hours.

GEOG 446 Sustainable Planning Seminar credit: 4 Hours.

Same as LA 446, NRES 446, and UP 446. See LA 446.

GEOG 455 Geog of Sub-Saharan Africa credit: 3 Hours.

Regional geography of Africa south of the Sahara. Geographic analysis of Africa which includes topics in both physical and human geography and provides a general overview of the processes and interactions between human and environmental factors that shape Africa's physical and human geography. 3 undergraduate hours. 3 graduate hours.

GEOG 459 Ecohydraulics credit: 4 Hours.

Interactions between hydraulic, ecological, and geomorphic processes in river environments at a wide range of both spatial and temporal scales. Draws upon and synthesize fundamental concepts from biology, ecology, fluid mechanics and morphodynamics, to apply them to truly interdisciplinary problems. Such an approach, coupled with hands-on experience involving planning, conducting and analyzing hands-on experiments at the Ven Te Chow Hydrosystems Laboratory and field surveys on local natural waters will provide the students with a broad perspective on the interconnections between physical and ecological systems. Students will apply their knowledge of fundamental processes to assess complex problems involving monitoring, management, conservation and restoration of ecosystems. 4 undergraduate hours. 4 graduate hours.

GEOG 460 Aerial Photo Analysis credit: 3 or 4 Hours.

Review of methods for extracting quantitative and qualitative information from aerial photographs using computer-based techniques and visual interpretation. The first part of the course will cover basic photogrammetry and mapping. The second part will focus on interpretation of physical, biological, and cultural features. Same as NRES 460. 3 undergraduate hours. 4 graduate hours. Prerequisite: Knowledge of trigonometry (MATH 014 or equivalent) and basic physical geography (GEOG 103 or equivalent).

GEOG 465 Transp and Sustainability credit: 3 or 4 Hours.

Descriptors of transportation systems; transportation as an industrial activity and public good; and transportation and spatial development, including the role of transportation in urban and regional development. Emphasis on the economic, environmental, and social aspects of sustainability as they apply to transportation systems and the activities they enable at local, regional, national and global levels. Field trip required. Same as ESE 465. Additional fees may apply. See Class Schedule. 3 undergraduate hours. 4 graduate hours.

This course satisfies the General Education Criteria for:
Advanced Composition

GEOG 466 Environmental Policy credit: 3 or 4 Hours.

Examination of the geographical and political aspects of human-environmental relations; focusing on how environmental problems are defined, negotiated, and addressed through policy formulation. Specific approaches to environmental policy will be considered at different geographical scales. Same as ESE 466. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Geography or Political Science or consent of instructor.

GEOG 468 Biological Modeling credit: 3 or 4 Hours.

Interdisciplinary modeling course for students interested in dynamic system modeling of living processes; each student will build a model by the end of the course. No special mathematical background required. Same as ANSC 449, CPSC 448, and IB 491. 3 undergraduate hours. 4 graduate hours. Prerequisite: IB 444 or equivalent, depending on curriculum.

GEOG 471 Recent Trends in Geog Thought credit: 4 Hours.

Examination of recent trends in human and physical geography. Themes include empiricism, logical positivism, regionalism, Marxism, realism, phenomenology, and post-modernism as applied to geographic research. Emerging geographic literature is explored to identify the latest conceptual developments. 4 undergraduate hours. 4 graduate hours.

GEOG 473 Digital Cartography & Map Design credit: 4 Hours.

Instruction and practice in the basic techniques of map making followed by a consideration of problems involved in the construction of maps for presentation in a reproduced form (i.e., printed, photographed); the selection of proper source materials for the base and body of the map, the compilation and correlation of these materials, and methods of mechanical and photographic reproduction. 4 undergraduate hours. 4 graduate hours.

GEOG 476 Applied GIS to Environ Studies credit: 3 Hours.

Demonstrates how geographic information systems (GIS) have become a major technology ubiquitously applied to solve important problems encountered in geospatial and environmental applications. 3 undergraduate hours. 3 graduate hours. Prerequisite: GEOG 103 or GEOG 104, consent of instructor.

GEOG 477 Introduction to Remote Sensing credit: 3 Hours.

Fundamentals of energy-matter interaction mechanisms, and the manifestation of reflected and emitted radiation on photographs and images; introduces characteristics of aerial films and filters, electro-optical scanners, and digital processing; and emphasizes applications in environmental problems. Same as NRES 477. 3 undergraduate hours. 3 graduate hours. Prerequisite: GEOG 280 (beginning statistics) or equivalent, or consent of instructor.

GEOG 478 Techniques of Remote Sensing credit: 4 Hours.

Optical and digital information processing of imagery acquired from aircraft and satellite remote sensing platforms; includes systems design, mensuration theory, photographic enhancement techniques, and automatic digital classification for all of the standard sensor systems; and laboratory focusing on the design and implementation of information processing techniques with application limited to a survey of uses. 4 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 477 or equivalent.

GEOG 479 Advanced Topics in GIS credit: 3 Hours.

Introduces advanced concepts in Geographic Information Science. Course topics may vary. 3 undergraduate hours. 3 graduate hours. May be repeated, if topics vary, in separate terms to a maximum of 9 hours, but not more than 6 hours in any one term. Prerequisite: GEOG 379 or equivalent.

GEOG 480 Principles of GIS credit: 3 Hours.

Focuses on Geographic Information Science (GIScience) principles that underlie the development of Geographic Information Systems (GIS) software and its intelligent use. Helps students adapt to rapidly changing geospatial technologies. Knowledge gained in this course will be general and, thus, not be limited to any specific software product that may be revised in the future. 3 undergraduate hours. 3 graduate hours. Prerequisite: GEOG 379 and GEOG 380 or equivalent, or consent of instructor.

GEOG 481 Intl Environ Cooperation credit: 3 Hours.

Examines the problems, politics and policies related to environmental issues that require international cooperation to address effectively. Transboundary, regional, and global environmental issues will be analyzed, spanning the atmosphere (acid rain, protection of the ozone layer, and climate change), the oceans (pelagic fisheries), and biodiversity (whaling, trade in endangered species). Discusses methods for increasing international environmental cooperation, such as unilateral actions, trade sanctions, financial aid, non-governmental monitoring and innovations in institutional design. Same as ESE 481. 3 undergraduate hours. 3 graduate hours. Prerequisite: One course in Geography or Political Science or consent of instructor.

GEOG 482 Challenges of Sustainability credit: 3 Hours.

Same as ESE 482 and GEOL 483. See ESE 482.

GEOG 483 Urban Geography credit: 3 Hours.

Broad background of theories, concepts, and methods of research for understanding how and why our cities have reached their current status. Focus on examining the internal structure of the North American city, including analysis of the commercial, industrial, and residential sectors of the urban environment. Particular emphasis is placed on the range of urban theories developed to explain both urban structure and contemporary urban ills. 3 undergraduate hours. 3 graduate hours.

GEOG 484 Cities, Crime, and Space credit: 3 or 4 Hours.

Focusing on US cities, this theory-intensive course surveys traditional and critical perspectives on relations between crime, space, and place. We will explore this interplay within broader contexts of industrial and post-industrial urbanization, concentrating on dynamics including governances, economic processes, and social transformations. Emphasis will be placed on the extent to which these interwoven processes generate, classify, organize, and react to crime across cityscapes. 3 undergraduate hours. 4 graduate hours.

GEOG 489 Programming for GIS credit: 4 Hours.

Introduction to programming to customize and extend the capabilities of geographic information systems. Topics include the principles of programming, advanced function and tools coding, visualization, fundamental spatial data structures, and spatial algorithms. 4 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 379 and GEOG 380 or equivalents, or consent of instructor.

GEOG 491 Research in Geography credit: 2 Hours.

Detailed examination and discussion of the methods of initiating and executing research projects in human or physical geography (taught in separate sections); requires students to write a research proposal of a quality suitable for a graduate thesis. 2 undergraduate hours. 2 graduate hours. Prerequisite: GEOG 471; either graduate standing in geography or senior standing as a geography major and consent of department.

GEOG 493 Democracy and Environment credit: 3 or 4 Hours.

Explores the effects of local democracy on natural resource management and the ways natural resource management can leverage the establishment and consolidation of local democracy. Investigates theoretical foundations of localism and decentralization, and analyzes the policy process by which theory is inscribed in law and project documents and translated into practice. Cases of global environmental policy, such as climate adaptation, UN Reduced Emissions from Deforestation and Degradation of the World Banks' Community Driven Development policies will be used for theoretical and empirical analysis. Draws case examples from developing countries. Same as NRES 494, SOC 493 and UP 493. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 210, course work in social science, or consent of instructor.

GEOG 495 Advanced Topics in Geography credit: 3 or 4 Hours.

Explores special topics not covered in regularly scheduled Geography courses. 3 or 4 undergraduate hours. 3 or 4 graduate hours. May be repeated if topics vary in the same term to a maximum of 9 undergraduate hours or 12 graduate hours or in separate terms to a maximum of 12 undergraduate hours or 12 graduate hours.

GEOG 496 Climate & Social Vulnerability credit: 3 or 4 Hours.

Existing climate variability and likely climate change call for policies to protect vulnerable people who make their livelihoods in a changing environment. Students will explore: 1) causes of climate related stress and disaster; 2) theories of vulnerability and adaptation; 3) practices and policies designed to reduce economic loss, hunger, famine and dislocation in the face of climate trends and events. Focus on multiple policy scales affecting poor and marginal populations, who are disproportionately vulnerable when facing climate stress, drawing on case examples primarily from the developing world. Same as ATMS 446 and SOC 451. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 410, GEOG 466, GEOG 471, GEOG 520, or consent of instructor.

GEOG 520 Political Ecology credit: 4 Hours.

Political ecology integrates social and biophysical processes in the study of nature-society relations. Examination of the conceptual origins of the field of political ecology and identification of influential bodies of research and promising research directions. Readings focus on recent advances, debates, and the ongoing evolution of political ecology as an integrative approach to Geography and environment-development studies. 4 graduate hours. No professional credit. Prerequisite: One of the following courses, or consent of the instructor: GEOG 410, GEOG 466, SOC 447, HIST 460, or equivalent.

GEOG 556 Regional Science Methods credit: 4 Hours.

Examines models of regional growth and development, including export base, input-output and econometric, cohort component and spatial interaction; emphasizes socioeconomic impact analysis and forecasting subnational economic and demographic change. Same as UP 556. Prerequisite: Consent of instructor.

GEOG 557 Seminar in Regional Science credit: 4 Hours.

Discusses advanced topics in regional science; prepares students for dissertation and thesis research, applied study for public agency, or other student research. Same as UP 557. Prerequisite: GEOG 556 or consent of instructor.

GEOG 560 Spatial Epidemiology credit: 4 Hours.

Same as PATH 560. See PATH 560.

GEOG 561 Landscapes and Human Health credit: 3 Hours.

Same as CHLH 580 and LA 570. See LA 570.

GEOG 570 Advanced Spatial Analysis credit: 4 Hours.

Advanced techniques of spatial analysis, including spatial autocorrelation, trend surface analysis, grouping and regionalization procedures, and point pattern analysis.

GEOG 575 Alluvial Boundary Layer Dynam credit: 3 Hours.

Examination of the structure of turbulent boundary layers in rivers and how turbulent flow, sediment transport and channel forms interact over a wide range of spatial and temporal scales. Explores these interactions through critical analysis of contemporary research in fluvial geomorphology, fluid mechanics, hydraulics and sedimentology. Same as GEOL 575. Prerequisite: Consent of instructor.

GEOG 587 Qualitative Research Methods credit: 4 Hours.

Same as UP 587. See UP 587.

GEOG 594 Seminar in Social Geography credit: 4 Hours.

Advanced study of a current research topic in social geography. Topic varies from term to term; prepares students for dissertation and thesis research through study of advanced literature and the completion of a research paper. Prerequisite: GEOG 471 or equivalent; graduate coursework in social geography or in one of the social sciences.

GEOG 595 Advanced Studies in Geography credit: 0 to 8 Hours.

Seminar and directed individual investigation of selected problems or regions; designed to develop ability to conduct independent investigation. Scheduled seminars are detailed in each term's Class Schedule. Approved for both letter and S/U grading. May be repeated.

GEOG 599 Thesis Research credit: 0 to 16 Hours.

Approved for S/U grading only. May be repeated.