



GEOGRAPHY (GEOG)

GEOG 803 Environmental Justice

Crosslisted with: GEOG 403

Description: Exploration of the concept of environmental justice, which describes how the impacts of the natural and built environment differ according to race, ethnicity, and economic status. Topics include the development of movement from its early concerns with the location of waste facilities, to disparities in health outcomes, access to affordable and healthy food, and climate change issues.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Groups: CAS Diversity in the US

GEOG 806 Spatial and Environmental Influences in Social Systems

Crosslisted with: GEOG 406

Description: How space, spatial structure, and spatially oriented behavior operate in social systems, emphasizing their influence on interpersonal communication and/or social exchange.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

GEOG 808 Microclimate: The Biological Environment

Crosslisted with: PLAS 408, GEOG 408, METR 408, NRES 408, AGRO 808, HORT 808, METR 808, NRES 808

Prerequisites: Junior standing, MATH 106 or equivalent, 5 hrs physics, major in any of the physical or biological sciences or engineering.

Description: Physical factors that create the biological environment.

Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity, and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light, and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Prerequisite for: BSEN 954, NRES 954

GEOG 817 Web GIS

Crosslisted with: GEOG 417

Prerequisites: GEOG 217 or GEOG 317

Description: Introduction to Internet-based GIS and web cartography. Focus on programming concepts underlying the creation and implementation of quality web mapping applications.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Offered: SPRING

GEOG 818 Introduction to Remote Sensing

Crosslisted with: GEOG 418, NRES 418, NRES 818

Prerequisites: Junior Standing

Description: Remote sensing of the earth from aerial and satellite platforms. Aerial photography, multispectral scanning, thermal imaging, microwave remote sensing techniques. Data acquisition and image analysis. Physical foundations of remote sensing using electromagnetic energy and energy-matter interactions. Applications in geographic, agricultural, environmental and natural resources analyses.

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Grading Option: Grade Pass/No Pass Option

Offered: FALL

Prerequisite for: GEOG 421, GEOG 821, NRES 421, NRES 821

Course and Laboratory Fee: \$115

GEOG 819 Applications of Remote Sensing in Agriculture and Natural Resources

Crosslisted with: PLAS 419, GEOG 419, GEOL 419, NRES 420, AGRO 819, GEOL 819, NRES 820

Prerequisites: Junior standing

Description: Introduction to the basic methods and practical applications of remote sensing to map, monitor and assess agricultural and natural resources and other environmental changes

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Grading Option: Grade Pass/No Pass Option

Course and Laboratory Fee: \$35

GEOG 821 Field Techniques in Remote Sensing

Crosslisted with: GEOG 421, NRES 421, NRES 821

Prerequisites: NRES 418/818

Description: Field techniques as they relate to remote-sensing campaigns. Research methods, systematic approaches to data collection, field spectroscopy, collecting ancillary information linked with spectroscopic data sets as well as aircraft or satellite missions and subsequent analyses of acquired data.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Course and Laboratory Fee: \$65

GEOG 822 Advanced Techniques in Geographic Information Systems

Crosslisted with: GEOG 422

Prerequisites: GEOG 217

Description: Vector and quadtree data structures, use of relational database management systems, topologically structured databases, query languages, digital terrain modeling, advanced data analysis methods and research issues in GIS. Extensive practical experience with the current GIS software.

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Grading Option: Grade Pass/No Pass Option

Prerequisite for: NRES 922

Course and Laboratory Fee: \$50

GEOG 825 Geovisualization**Crosslisted with:** GEOG 425**Prerequisites:** GEOG 217

Description: Geovisualization encompasses the techniques and concepts that underlie digital cartography and the broader field of spatial visualization, exploring cartographic applications of computer animation and multimedia for the dual purposes of assisting visual thinking in map-oriented research and data exploration, and in communicating geographic ideas to others.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**Offered:** FALL**GEOG 827 Introduction to the Global Positioning System (GPS)****Crosslisted with:** GEOG 427, NRES 427, NRES 827**Prerequisites:** Junior standing.**Notes:** Familiarity with mapping and GIS recommended.

Description: Integrated lectures, lab exercises and field experience provide an understanding of GPS technology and applications. Students will learn to collect, correct and use GPS data in a geographic information system (GIS) environment.

Credit Hours: 2**Max credits per semester:** 2**Max credits per degree:** 2**Grading Option:** Grade Pass/No Pass Option**Course and Laboratory Fee:** \$65**GEOG 831 Cultural Geography****Crosslisted with:** GEOG 431

Description: The history of cultural geography from von Humboldt through Carl Sauer to the 'new' cultural geographies of Don Mitchell, Gillian Rose and Noel Castree. The current theoretical debates of feminism, post-structuralism, post-colonialism and environmentalism, and the influences of literary and cultural studies in the development of cultural geography and the various methodologies involved.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**GEOG 832 Programming, Scripting, and Automation for GIS****Crosslisted with:** GEOG 432, NRES 432**Prerequisites:** GEOG 217

Notes: Practical experience or other formal preparation in GIS may be substituted for prerequisite by permission.

Description: GIS-focused programming, scripting, and spatial analysis using the Python and R programming languages. Topics include: the ArcPy library, algorithm development, open source geospatial libraries, and the manipulation and analysis of geospatial data.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**Offered:** SPRING**Course and Laboratory Fee:** \$50**GEOG 835 Cultural Survival: Indigenous People's Rights****Crosslisted with:** GEOG 435

Description: Threats against indigenous peoples' lands, resources and cultural patrimony, languages and knowledge systems more than 500 years after Columbus instigated European colonialism, creating the first global world order. The responses of Indigenous peoples to the imposition of Western dominated economic and political systems. Land rights, economic development, and women's rights from the perspective of different Indigenous communities around the world.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**GEOG 841 Geographies of Health****Crosslisted with:** GEOG 441

Description: Exploration of political economies of health care, the geographic distribution of services, the impacts of location in both care utilization and access, emphasizing the importance of "place" in health outcomes.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**GEOG 844 Geo-demographic and Geographic Information Systems (GIS)****Crosslisted with:** GEOG 444

Description: Geo-demographic and geographic information system (GIS) analysis, interpretation and mapping of geographical patterns of population size, population composition, and composition change. Theoretical and applied investigation of geo-demographic issues involving marketing research, public facilities planning, public health provision, and small-area population change forecasting. GIS use of TIGER and small-area census data.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option**Course and Laboratory Fee:** \$45**GEOG 847 Political Geography****Crosslisted with:** GEOG 447

Description: Importance of factors of a physical, economic, and human character in political development at local to global scales; international geopolitical aspects of environment, territoriality, core areas, capitals, and boundaries; national geographical patterns of voting, representation, public administration and public policy.

Credit Hours: 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Grade Pass/No Pass Option

**GEOG 850 Climate and Society**

Crosslisted with: PLAS 450, GEOG 450, METR 450, NRES 452, AGRO 850, METR 850, NRES 852

Prerequisites: Junior standing or above.

Notes: Offered spring semester of even-numbered calendar years.

Description: Impact of climate and extreme climatic events on society and societal responses to those events. Global in scope and interdisciplinary.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Offered: SPRING

GEOG 861 Geospatial Approaches in Digital Humanities and Social Sciences

Crosslisted with: ANTH 461, ANTH 861, CLAS 461, CLAS 861, GEOG 461, HIST 461, HIST 861

Description: Study of geographic concepts and critical analysis of applications of Geographic Information Systems (GIS) in humanities and social sciences and application of geospatial tools for humanities and social science research; learn how to collect, manage, analyze, and visualize spatial data for real-world projects

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

Course and Laboratory Fee: \$50

GEOG 867 Great Plains Field Pedology

Crosslisted with: PLAS 477, GEOG 467, NRES 477, SOIL 477, NRES 877

Prerequisites: PLAS/SOIL 153.

Description: Spatial relationship of soil properties on various parts of landscape typical of the Plains, causal factors, and predictions of such relationships on other landscapes. Grouping these properties into classes, naming the classes, and the taxonomy that results from this grouping. Application of a taxonomy to a real situation through making a field soil survey in a region representative of the Plains border, predicting land use response of various mapped units as it affects the ecosystem, and evaluating the effectiveness of the taxonomic system used in the region surveyed.

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Grading Option: Grade Pass/No Pass Option

Course and Laboratory Fee: \$80

GEOG 869 Bio-Atmospheric Instrumentation

Crosslisted with: GEOG 469, PLAS 407, METR 469, AGST 469, NRES 469, AGRO 869, HORT 807, METR 869, AGST 869, NRES 869

Prerequisites: Junior standing; MATH 106; 4 hrs physics; physical or biological science major.

Description: Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods are discussed and evaluated.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

GEOG 884 Water Resources Seminar

Crosslisted with: PLAS 484, GEOG 484, GEOL 484, NRES 484, NRES 884, AGRO 884, GEOL 884

Prerequisites: Junior or above standing

Description: Seminar on current water resources research and issues in Nebraska and the region.

Credit Hours: 1

Max credits per semester: 1

Max credits per degree: 1

Grading Option: Grade Pass/No Pass Option

GEOG 891 Special Topics in Geography

Crosslisted with: GEOG 491, NRES 491

Description: Topics vary.

Credit Hours: 1-6

Min credits per semester: 1

Max credits per semester: 6

Max credits per degree: 6

Grading Option: Grade Pass/No Pass Option

GEOG 897 Geography Field Tour

Crosslisted with: GEOG 497

Prerequisites: Permission.

Description: Applying geographic concepts with field training.

Credit Hours: 1-6

Min credits per semester: 1

Max credits per semester: 6

Max credits per degree: 6

Grading Option: Grade Pass/No Pass Option

Offered: SUMMER

Experiential Learning: Fieldwork

GEOG 898 Research

Crosslisted with: GEOG 498

Prerequisites: Permission.

Description: Research experience.

Credit Hours: 1-6

Min credits per semester: 1

Max credits per semester: 6

Max credits per degree: 6

Grading Option: Grade Pass/No Pass Option

Course and Laboratory Fee: \$20

GEOG 899 Masters Thesis

Prerequisites: Admission to masters degree program and permission of major adviser

Credit Hours: 1-10

Min credits per semester: 1

Max credits per semester: 10

Max credits per degree: 99

Grading Option: Grade Pass/No Pass Option

GEOG 901 Pro-seminar in Research Methods and Professional Development

Description: Development of skills required for success in completing a graduate degree and forging a career as a geographer. Setting career goals, designing a graduate program, preparing research proposals, presenting research proposals, presenting research at professional conferences, reviewing professional literature and writing articles for publication.

Credit Hours: 2

Max credits per semester: 2

Max credits per degree: 2

Grading Option: Grade Pass/No Pass Option

GEOG 902 General Seminar

Credit Hours: 1-2

Min credits per semester: 1

Max credits per semester: 2

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

GEOG 903 History and Philosophy of Geography

Description: History of geographical thought concentrating on the period since 1800. Emphasis on both the traditional and modern ways of viewing the nature of geography and to the linkages between them.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Grade Pass/No Pass Option

GEOG 935 Seminar in Historical Geography

Crosslisted with: NRES 935

Description: Discussion of current literature and research on selected aspects of historical geography. Specific theme of course varies according to instructor.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 6

Grading Option: Grade Pass/No Pass Option

GEOG 940 Seminar in Human Geography

Description: Discussion of current literature and research on selected aspects of human geography.

Credit Hours: 1-9

Min credits per semester: 1

Max credits per semester: 9

Max credits per degree: 9

Grading Option: Grade Pass/No Pass Option

GEOG 994 Seminar in Anthropology and Geography

Crosslisted with: ANTH 994

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 6

Grading Option: Grade Pass/No Pass Option

GEOG 996 Non-thesis Research

Prerequisites: 24 hrs geography and permission

Credit Hours: 1-4

Min credits per semester: 1

Max credits per semester: 4

Max credits per degree: 24

Grading Option: Grade Pass/No Pass Option

GEOG 999 Doctoral Dissertation

Prerequisites: Admission to doctoral degree program and permission of supervisory committee chair

Credit Hours: 1-24

Min credits per semester: 1

Max credits per semester: 24

Max credits per degree: 99

Grading Option: Grade Pass/No Pass Option