GEOGRAPHY (GEOG)

GEOG 101 Discover Geography
Description: An orientation to the field of Geography, discussion of career opportunities, an overview of requirements for the major, and an introduction to resources available at UNL and in the Lincoln community. Learn about unique contributions that geographers are making to address issues in management of natural resources, public health, water and food security, international trade, immigration and other areas. Recommended for any student considering a career and a major or minor in Geography. The course is required for declared Geography majors. Letter grade only.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Format: LEC

GEOG 109 Water in Society
Crosslisted with: SOIL 109, AECN 109, NRES 109, ENVR 109
Description: Introduction to the scientific, social, and economic dimensions of historical and contemporary water systems. Students will develop an understanding of hydrologic systems and analyze and engage in decision-making about complex challenges associated with water resource use.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Offered: FALL
ACE: ACE 4 Science ACE 8 Civic/Ethics/Stewardship

GEOG 120 Introductory Economic Geography
Crosslisted with: GEOG 120H
Description: Basic factors influencing the location of economic activity. Influence of space and location on the evolution and development of economic systems. World and regional patterns of economic activities.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Human-Economic Geography

GEOG 120H Introductory Economic Geography
Crosslisted with: GEOG 120
Description: Basic factors influencing the location of economic activity. Influence of space and location on the evolution and development of economic systems. World and regional patterns of economic activities.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Human-Economic Geography

GEOG 140 Introductory Human Geography
Crosslisted with: GEOG 140H
Description: Human populations, cultures, and landscapes, with particular attention to human-environment relations and global interconnections. Students who have previously taken GEOG 100 may not receive credit for GEOG 140.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Human-Economic Geography

GEOG 140H Introductory Human Geography
Crosslisted with: GEOG 140
Description: Human populations, cultures, and landscapes, with particular attention to human-environment relations and global interconnections. Students who have previously taken GEOG 100 may not receive credit for GEOG 140.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Human-Economic Geography

GEOG 155 Elements of Physical Geography
Crosslisted with: GEOG 155H
Description: Investigation of the basic elements of the physical environment of the earth and its atmosphere. Includes atmospheric processes, temperature distributions, weather systems, severe weather, climates, water balance, vegetation and soil distributions, landforms and their processes, and natural hazards. Modifying influences that humans have on the physical environment and atmosphere examined. Students who earn credit toward the degree in GEOG 155 may not earn credit toward the degree in GEOG 150 or in the combination of GEOG 150 and 152.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
ACE: ACE 4 Science
Groups: Physical Geography

GEOG 155H Elements of Physical Geography
Crosslisted with: GEOG 155
Description: Investigation of the basic elements of the physical environment of the earth and its atmosphere. Includes atmospheric processes, temperature distributions, weather systems, severe weather, climates, water balance, vegetation and soil distributions, landforms and their processes, and natural hazards. Modifying influences that humans have on the physical environment and atmosphere examined. Students who earn credit toward the degree in GEOG 155 may not earn credit toward the degree in GEOG 150 or in the combination of GEOG 150 and 152.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
ACE: ACE 4 Science
Groups: Physical Geography
GEOG 170 Introduction to Great Plains Studies  
Crosslisted with: ANTH 170, ANTH 170H, GEOG 170H, GPSP 170, GPSP 170H, NRES 170, NRES 170H, SOCI 170  
Description: Interdisciplinary study of the natural environment, social environment, human heritage, arts and humanities of the Great Plains.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
Groups: Regional Geography  

GEOG 170H Introduction to Great Plains Studies  
Crosslisted with: ANTH 170, ANTH 170H, GEOG 170, GPSP 170, GPSP 170H, NRES 170, NRES 170H, SOCI 170  
Description: Interdisciplinary study of the natural environment, social environment, human heritage, arts and humanities of the Great Plains.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
Groups: Regional Geography  

GEOG 181 Quality of the Environment  
Crosslisted with: GEOG 181H  
Description: Analysis of human’s role in altering the quality of the environment through their impact on eco-health, transformation of the landscape, and spatial organization and behavior.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
ACE: ACE 9 Global/Diversity ACE 6 Social Science  
Groups: Human-Economic Geography  

GEOG 181H Quality of the Environment  
Crosslisted with: GEOG 181  
Description: Analysis of human’s role in altering the quality of the environment through their impact on eco-health, transformation of the landscape, and spatial organization and behavior.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
ACE: ACE 9 Global/Diversity ACE 6 Social Science  
Groups: Human-Economic Geography  

GEOG 198 Special Topics in Geography  
Crosslisted with: GEOG 198  
Description: Offered from time to time by faculty members who wish to examine current problems in geography. May take a variety of forms including the freshman seminar and the minicourse.  
Credit Hours: 1-3  
Min credits per semester: 1  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
ACE: ACE 4 Science  
Groups: Regional Geography  

GEOG 200 Landscape and Environmental Appreciation  
Crosslisted with: HORT 200, LARC 200  
Description: Values and processes in human landscapes and natural environments. Concepts and tools to understand the context of local and global environments and significant historical landscapes. Landscape as an indicator of aesthetic quality, design principles and processes as integrators of humans and nature, and the garden as a model for creating sustainable landscapes.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
Prerequisite for: HORT 267  
ACE: ACE 7 Arts ACE 9 Global/Diversity  
Groups: Human-Economic Geography  

GEOG 217 Mapping Science in the 21st Century  
Description: Introduction to modern mapping sciences. Interpret and use both traditional and digital maps. Fundamentals of thematic mapping, topographic map analysis, interpretation of aerial and satellite imagery, principles of geographic information systems (GIS), fundamentals of the global positioning (GPS), and mapping on the Internet.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
Groups: Techniques Techniques  

GEOG 271 Geography of the United States  
Crosslisted with: GEOG 271H  
Description: Introduction to the regional geography of the United States. Attention to the significance of location, advantages and limitations of the natural environment, population distribution, and economic development considered regionally.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
ACE: ACE 4 Science  
Groups: Regional Geography  

GEOG 271H Geography of the United States  
Crosslisted with: GEOG 271  
Description: Introduction to the regional geography of the United States. Attention to the significance of location, advantages and limitations of the natural environment, population distribution, and economic development considered regionally.  
Credit Hours: 3  
Max credits per semester: 3  
Max credits per degree: 3  
Format: LEC  
ACE: ACE 4 Science  
Groups: Regional Geography
GEOG 272 Geography of World Regions
Crosslisted with: GEOG 272H
Description: Appraisal of the interaction between the physical environment, the human resources, and economic activities for the major regions of the world. Application of fundamental geographical concepts to regional analysis.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Regional Geography

GEOG 272H Geography of World Regions
Crosslisted with: GEOG 272
Description: Appraisal of the interaction between the physical environment, the human resources, and economic activities for the major regions of the world. Application of fundamental geographical concepts to regional analysis.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Regional Geography

GEOG 281 Introduction to Water Science
Crosslisted with: GEOG 281H, NRES 281, NRES 281H, WATS 281, WATS 281H
Description: Survey of the water science from the perspective of both natural and social sciences. Water budget, precipitation, evapotranspiration, runoff and stream flow, groundwater, water quality parameters, economics of water, water policy, water law and water politics.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Prerequisite for: AGRO 361, GEOL 361, NRES 361, SOIL 361, WATS 361, NRES 361H, AGRO 361H, GEOL 361H, SOIL 361H, WATS 361H; NRES 319
Groups: Physical Geography

GEOG 281H Introduction to Water Science
Crosslisted with: GEOG 281, NRES 281, NRES 281H, WATS 281, WATS 281H
Description: Survey of the water science from the perspective of both natural and social sciences. Water budget, precipitation, evapotranspiration, runoff and stream flow, groundwater, water quality parameters, economics of water, water policy, water law and water politics.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Prerequisite for: AGRO 361, GEOL 361, NRES 361, SOIL 361, WATS 361, NRES 361H, AGRO 361H, GEOL 361H, SOIL 361H, WATS 361H; NRES 319
Groups: Physical Geography

GEOG 283 Space, the Environment and You
Crosslisted with: GEOG 283H
Description: Experiments to help individuals develop awareness of the extent to which their feelings and behavior are influenced by the spatial and environmental dimensions of their surroundings.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Human-Economic Geography

GEOG 283H Space, the Environment and You
Crosslisted with: GEOG 283
Description: Experiments to help individuals develop awareness of the extent to which their feelings and behavior are influenced by the spatial and environmental dimensions of their surroundings.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Human-Economic Geography

GEOG 289 People and the Land: Human Environmental Interactions on the Great Plains
Crosslisted with: NRES 289
Description: Explore human environmental interaction on the Great Plains. Samples a variety of Great Plains cultures and time periods to explore past use of the Great Plains environment. Evaluation of attributes and related data critical to the operation of past social-ecological systems with reference to changing climatic/ecological dynamics, human environmental impacts, and the sustainability of various indigenous and western modes of land use on the Great Plains. Investigate knowledge of these processes and how they can be of relevance to contemporary issues of Great Plains land management and resource utilization.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 6 Social Science ACE 5 Humanities

GEOG 308 Biogeography
Crosslisted with: GEOG 308H, GEO 308, GEO 308H, NRES 308, NRES 308H
Description: Introduction to the basic concepts of biogeography, the study of distributions of plants and animals, both past and present. Biogeography is a highly interdisciplinary science, relying heavily on ecology, geological science, and climatology. It is global in scope and offers the latest knowledge in understanding organism distributions, and the factors that determine those distributions.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Physical Geography
GEOG 308H Biogeography
Crosslisted with: GEOG 308, GEOL 308, GEOL 308H, NRES 308, NRES 308H
Description: Introduction to the basic concepts of biogeography, the study of distributions of plants and animals, both past and present. Biogeography is a highly interdisciplinary science, relying heavily on ecology, geological science, and climatology. It is global in scope and offers the latest knowledge in understanding organism distributions, and the factors that determine those distributions.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Physical Geography

GEOG 312 Introduction to Geospatial Information Sciences
Crosslisted with: GEOG 312H, NRES 312, NRES 312H
Description: Introduction to the theory and applications of geospatial information technology. Remote sensing, GPS data collection, GIS data types, editing GIS data, and spatial data analysis with emphasis on applications to natural resources using a problem-based learning format.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Techniques Techniques

GEOG 312H Introduction to Geospatial Information Sciences
Crosslisted with: GEOG 312, NRES 312, NRES 312H
Description: Introduction to the theory and applications of geospatial information technology. Remote sensing, GPS data collection, GIS data types, editing GIS data, and spatial data analysis with emphasis on applications to natural resources using a problem-based learning format.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Techniques Techniques

GEOG 317 Cartography I: Introduction to Cartography
Description: Introduction to maps and mapping with emphasis on applied and theoretical considerations in map design and construction. Students create computer maps from specifications of instructor. Opportunity to actively participate in the technical processes of data collection, cartographic design, and construction normally associated with the actual production of maps.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Groups: Techniques Techniques

GEOG 334 Historical Geography of the Great Plains
Crosslisted with: GEOG 334H
Description: Traces the sequence of the human occupancy of the Great Plains from prehistoric times to the present. Focus on the changing perception and utilization of the Great Plains environment, leading to the emergence of a distinctive contemporary region.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 5 Humanities
Groups: Human-Economic Geography

GEOG 334H Historical Geography of the Great Plains
Crosslisted with: GEOG 334
Description: Traces the sequence of the human occupancy of the Great Plains from prehistoric times to the present. Focus on the changing perception and utilization of the Great Plains environment, leading to the emergence of a distinctive contemporary region.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 5 Humanities
Groups: Human-Economic Geography

GEOG 361 Urban Geography
Crosslisted with: GEOG 361H
Description: Geography of cities and metropolitan areas of the past, present, and future. Spatial structures of urban settlements in North America and elsewhere examined both theoretically and descriptively.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 6 Social Science
Groups: Human-Economic Geography

GEOG 361H Urban Geography
Crosslisted with: GEOG 361
Description: Geography of cities and metropolitan areas of the past, present, and future. Spatial structures of urban settlements in North America and elsewhere examined both theoretically and descriptively.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 6 Social Science
Groups: Human-Economic Geography

GEOG 370 Geography of Nebraska
Crosslisted with: GEOG 370H
Description: Survey of the physical and cultural features of the geography of Nebraska as related to the changing patterns in the human occupation of the geographic regions of the state.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 370H Geography of Nebraska
Crosslisted with: GEOG 370
Description: Survey of the physical and cultural features of the geography of Nebraska as related to the changing patterns in the human occupation of the geographic regions of the state.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography
GEOG 372 European Landscapes and Cultures
Description: The physical and human geographies of Europe. Population migrations, landscape change, and diversity of culture in Europe and selected sub-regions of Europe.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 375 Geography of Asia
Crosslisted with: GEOG 375H
Description: Patterns of physical features, population, and economic activities and other cultural aspects. Attention to India, China, and Japan.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 375H Geography of Asia
Crosslisted with: GEOG 375
Description: Patterns of physical features, population, and economic activities and other cultural aspects. Attention to India, China, and Japan.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 377 Women of the Great Plains
Crosslisted with: GPSP 377, WMNS 377
Description: The intersection of gender, identity, power, and representation throughout time and space in the Great Plains of the United States and Canada.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 378 Geography of Latin America
Crosslisted with: GEOG 378H
Description: Introduction to the geography of Mexico, Central America, West Indies, and South America. Advantage and limitations of the natural environment, population distribution, and economic development are considered regionally.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Regional Geography

GEOG 378H Geography of Latin America
Crosslisted with: GEOG 378
Description: Introduction to the geography of Mexico, Central America, West Indies, and South America. Advantage and limitations of the natural environment, population distribution, and economic development are considered regionally.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Regional Geography

GEOG 380 Geography of Africa
Crosslisted with: ETHN 380, NRES 380
Description: Overview of the major physical and human landscapes in Africa. Prominent past and current events will be placed into a spatial context in an attempt to develop insight into the interrelationships that exist among people, cultures, countries, economies, and the environment, not only within Africa, but between Africa and the rest of the world.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 9 Global/Diversity
Groups: Regional Geography

GEOG 398 Special Topics in Geography
Description: Selected topic possessing areal implications.
Credit Hours: 1-24
Min credits per semester: 1
Max credits per semester: 24
Max credits per degree: 24
Format: LEC

GEOG 399 Independent Study in Geography
Credit Hours: 1-24
Min credits per semester: 1
Max credits per semester: 24
Max credits per degree: 24
Format: IND

GEOG 399H Honors Course
Credit Hours: 1-4
Min credits per semester: 1
Max credits per semester: 4
Max credits per degree: 4
Format: LEC

GEOG 402 Undergraduate Seminar
Prerequisites: Junior standing
Description: The history and philosophy of geography. Contemporary issues in geography. GEOG 402 serves as the capstone course for the Geography major.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
ACE: ACE 10 Integrated Product
### GEOG 406 Spatial and Environmental Influences in Social Systems
**Crosslisted with:** GEOG 806  
**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  
**Format:** LEC  
**Groups:** Human-Economic Geography

### GEOG 408 Microclimate: The Biological Environment
**Crosslisted with:** AGRO 408, HORT 408, METR 408, NRES 408, WATS 408  
**Prerequisites:** Junior standing, MATH 106 or equivalent, 5 hrs physics, major in any of the physical or biological sciences or engineering; or permission.  
**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  
**Format:** LEC  
**Groups:** Physical Geography

### GEOG 409 Human Dimensions of Natural Resources
**Crosslisted with:** NRES 409  
**Prerequisites:** Junior standing; 12 credit hours in natural resources, environmental studies, or closely related fields, or permission of instructor.  
**Description:** Overview of the human dimensions of natural resources issues. Exploration of the socioeconomic, cultural, and political aspects of human behavior and how these interact with, might influence, or are influenced by the environment.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**Groups:** Physical Geography

### GEOG 412 Introduction to Geographic Information Systems
**Crosslisted with:** GEOG 812, NRES 412, NRES 812  
**Description:** Introduction to conceptual foundations and applications of computer-based geographic information systems (GIS). GIS database development, spatial data analysis, spatial modeling, GIS implementation and administration.  
**Credit Hours:** 4  
**Max credits per semester:** 4  
**Max credits per degree:** 4  
**Format:** LEC  
**Prerequisite for:** GEOG 922, NRES 922  
**Groups:** Techniques Techniques

### GEOG 414 Quantitative Methods in Geography
**Crosslisted with:** GEOG 814  
**Description:** Introduction to quantitative techniques utilized in geographic research. Fundamental statistical and mathematical techniques used in analyzing spatial relationships examined.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**Groups:** Techniques Techniques

### GEOG 417 Cartography II: Electronic Atlas Design and Production
**Crosslisted with:** GEOG 817  
**Description:** Introduction to the tools, techniques, and analytical uses of computer mapping. Programming necessary for producing own computer mapping programs.  
**Credit Hours:** 3  
**Max credits per semester:** 3  
**Max credits per degree:** 3  
**Format:** LEC  
**Groups:** Techniques Techniques

### GEOG 418 Introduction to Remote Sensing
**Crosslisted with:** GEOG 818, NRES 418, NRES 818  
**Description:** Introduction to remote sensing of the earth from aerial and satellite platforms. Aerial photography, multispectral scanning, thermal imaging and microwave remote sensing techniques. Physical foundations of remote sensing using electromagnetic energy, energy-matter interactions, techniques employed in data acquisition and methods of image analysis. Weekly laboratory provides practical experience in visual and digital interpretation of aerial photography, satellite imagery, thermal and radar imagery. Applications in geographic, agricultural, environmental and natural resources analyses.  
**Credit Hours:** 4  
**Max credits per semester:** 4  
**Max credits per degree:** 4  
**Format:** LEC  
**Prerequisite for:** GEOG 421, GEOG 821, NRES 421, NRES 821  
**Groups:** Techniques Techniques

### GEOG 419 Applications of Remote Sensing in Agriculture and Natural Resources
**Crosslisted with:** AGRO 419, GEOL 419, NRES 420  
**Prerequisites:** GEOG/NRES 418.  
**Description:** Introduction to the practical uses of remote electromagnetic sensing in dealing with agricultural and water-resources issues.  
**Credit Hours:** 4  
**Max credits per semester:** 4  
**Max credits per degree:** 4  
**Format:** LEC  
**Groups:** Techniques Techniques
GEOG 420 Digital Image Analysis of Remote Sensing Data
Crosslisted with: GEOG 820
Description: Principles and methods of digital image processing and analysis of remotely sensed data. The biophysical basis of remote sensing and the various sensor systems typically used for monitoring terrestrial and aquatic environments. Algorithms for the preprocessing, enhancement, classification and mapping of remote sensing data for agriculture, urban, geological, environmental and natural resources management problems.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Groups: Techniques Techniques

GEOG 421 Field Techniques in Remote Sensing
Crosslisted with: GEOG 821, NRES 421, NRES 821
Prerequisites: GEOG 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
Format: LEC
Groups: Techniques Techniques

GEOG 422 Advanced Techniques in Geographic Information Systems
Crosslisted with: GEOG 822
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
Format: LEC
Prerequisite for: GEOG 922, NRES 922
Groups: Techniques Techniques

GEOG 425 Scientific Visualization in Cartography
Crosslisted with: GEOG 825
Description: Explores 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: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Groups: Techniques Techniques

GEOG 427 Introduction to the Global Positioning System (GPS)
Crosslisted with: GEOG 827, NRES 427, NRES 827
Prerequisites: Junior standing and a basic familiarity with mapping and GIS, or permission
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
Format: LEC

GEOG 431 Cultural Geography
Crosslisted with: GEOG 431H, GEOG 831
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
Format: LEC
Groups: Human-Economic Geography

GEOG 431H Cultural Geography
Crosslisted with: GEOG 431, GEOG 831
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
Format: LEC
Groups: Human-Economic Geography

GEOG 432 GIS Programming for Advanced Spatial Analysis and Modeling
Crosslisted with: GEOG 832
Prerequisites: GEOG/NRES 412/812 or 18 hours of GIS practice
Description: Techniques for Geoprocessing script programming to customize geographic information systems (GIS), utilize GIS tools, and implement application-specific spatial analysis, modeling algorithms and procedures.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
GEOG 435 Cultural Survival: Indigenous People's Rights
Crosslisted with: GEOG 835
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
Format: LEC
Groups: Human-Economic Geography

GEOG 444 Geo-demographic and Geographic Information Systems (GIS)
Crosslisted with: GEOG 844
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
Format: LEC
Groups: Human-Economic Geography

GEOG 447 Political Geography
Crosslisted with: GEOG 847
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
Format: LEC
Groups: Human-Economic Geography

GEOG 448 Pro-seminar in International Relations I
Crosslisted with: ANTH 479, HIST 479, POLS 466, SOCI 466
Prerequisites: Senior standing and permission.
Description: Topic varies
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Variable group based on topic

GEOG 450 Climate and Society
Crosslisted with: AGRO 450, METR 450, NRES 452
Prerequisites: METR 100 or NRES 370 or equivalent.
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
Format: LEC
Groups: Physical Geography

GEOG 461 Geospatial Approaches in Digital Humanities and Social Sciences
Crosslisted with: ANTH 461, ANTH 861, CLAS 461, CLAS 861, GEOG 861, 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
Format: LEC
Groups: Techniques

GEOG 467 Great Plains Field Pedology
Crosslisted with: AGRO 477, AGRO 477H, GEOG 467H, NRES 477, NRES 477H, SOIL 477, SOIL 477H
Prerequisites: AGRO/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
Format: LEC
Groups: Physical Geography

GEOG 467H Great Plains Field Pedology
Crosslisted with: AGRO 477, AGRO 477H, GEOG 467, NRES 477, NRES 477H, SOIL 477, SOIL 477H
Prerequisites: AGRO/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
Format: LEC
Groups: Physical Geography
GEOG 469 Bio-Atmospheric Instrumentation
Crosslisted with: AGRO 469, HORT 407, METR 469, MSYM 469, NRES 469
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
Format: LEC
Groups: Physical Geography

GEOG 478 Pro-seminar in Latin American Studies
Crosslisted with: ANTH 478, HIST 478, LAMS 478, POLS 478, SOCI 478, MODL 478, EDPS 478, ANTH 878, GEOG 878, HIST 878, POLS 878, SOCI 878, MODL 878, EDPS 878
Prerequisites: Junior standing and permission.
Description: An interdisciplinary analysis of topical issues in Latin American Studies.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 6
Format: LEC
Groups: Regional Geography

GEOG 483 Cognitive Processes in Map Comprehension and Use
Crosslisted with: GEOG 883
Description: How cognitive processes help individuals to comprehend the spatial circumstances or arenas they confront when carrying out their daily activities. Awareness of space, spatial knowing, formation of cognitive maps, importance of spatial images in negotiation of surroundings, and the relationship of cognitive maps to orientation and wayfinding.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Groups: Techniques

GEOG 484 Water Resources Seminar
Crosslisted with: AGRO 484, GEOL 484, NRES 484, WATS 484, NRES 884, AGRO 884, GEOG 884, GEOL 884, WATS 884
Prerequisites: Junior or above standing, or permission
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
Format: LEC

GEOG 491 Geography Field Tour
Crosslisted with: GEOG 891, NRES 491
Description: Group educational tours to specific sites that illustrate aspects of physical and cultural geography. Off-campus travel required.
Credit Hours: 2-3
Min credits per semester: 2
Max credits per semester: 3
Max credits per degree: 6
Format: FLD
Groups: Physical Geography

GEOG 497 Internship in Geography
Description: Applying geographic training with on-the-job learning.
Credit Hours: 1-6
Min credits per semester: 1
Max credits per semester: 6
Max credits per degree: 6
Format: FLD

GEOG 498 Advanced Special Problems
Crosslisted with: GEOG 898
Description: Reading course or special projects.
Credit Hours: 1-24
Min credits per semester: 1
Max credits per semester: 24
Max credits per degree: 24
Format: LEC