

GEOGRAPHY

Degree Programs Offered

- Geography, MA (<http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/geography/geography-ma/>)

Certificates Offered

- Geographic Information Science Certificate (<http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/geography/geographic-information-science-certificate/>)

GEOG 8000 HISTORY AND PHILOSOPHY OF GEOGRAPHY (3 credits)

Introduction to history of geography. Emphasis on significant concepts, methodologies, and philosophies in geography from classical Greeks to the present.

Prerequisite(s)/Corequisite(s): Permission

GEOG 8016 CONSERVATION OF NATURAL RESOURCES (3 credits)

A study of conservation techniques and problems with particular emphasis on the United States. Includes philosophical and economic aspects of resource management and a systematic survey of traditional conservation types including soils, forestry, water resources and energy. (Cross-listed with GEOG 4010).

Prerequisite(s)/Corequisite(s): Three hours of geography

GEOG 8026 QUANTITATIVE ANALYSIS IN GEOGRAPHY (3 credits)

An introduction to multivariate statistical analysis and spatial statistics. Emphasis will be placed on the nature of geographic data, sampling theory and design, descriptive and spatial statistics, inferential statistics, correlation and regression analysis. Students will receive hands-on experience working with statistical data sets, software and scientific visualization numerical results. (Cross-listed with GEOG 4020).

Prerequisite(s)/Corequisite(s): MATH 1530 or permission

GEOG 8036 COMPUTER MAPPING AND VISUALIZATION (3 credits)

Computer techniques in the mapping and visualization of spatial data. Various forms of spatial data manipulation and computer graphic output techniques are examined. Particular attention is given to the the creation of maps for the internet and the incorporation of interaction and animation in their display. (Cross-listed with GEOG 4030).

Prerequisite(s)/Corequisite(s): GEOG 1090 or permission of instructor. Background in programming, particularly JavaScript, highly recommended.

GEOG 8040 SEMINAR IN EDUCATION GEOGRAPHY (3 credits)

A survey of methods, instruction aids and goals for teaching geography. Designed to aid the teacher in the improvement of geographic instruction in elementary and secondary schools as well as in higher education.

Prerequisite(s)/Corequisite(s): Permission

GEOG 8046 GEOARCHAEOLOGY (3 credits)

The study of archaeology with the use of geological and geographical methodology. (Cross-listed with GEOL 4040, GEOG 4040).

GEOG 8056 GEOGRAPHIC INFORMATION SYSTEMS I (4 credits)

An introduction to the concepts and principles and geographic information systems (GIS). Emphasis will be placed on geographic data inputs, manipulation, analysis, and output functions. Exercises introduce students to GIS software and applications. Usually offered Fall, Spring, Summer. (Cross-listed with GEOG 4050).

Prerequisite(s)/Corequisite(s): 3 hours in Geography or by permission

GEOG 8106 BIOGEOGRAPHY (3 credits)

This course is intended as an introduction to biogeography, the study of the distribution and evolution of organisms across space and through time. Usually offered every year. (Cross-listed with BIOL 4100, GEOL 4100, BIOL 8106, GEOL 8106, GEOG 4100).

Prerequisite(s)/Corequisite(s): BIOL 1450 and BIOL 1750 or GEOL 3100 or BIOL 3100, junior-senior

GEOG 8126 URBAN GEOGRAPHY (3 credits)

This course is designed to serve as an introduction to the complex and dynamic urban system, including the physical, economic, political, cultural, social, and environmental forces that shape the form and function of cities, as well as how individuals and groups experience urban life. We make ample use of geographic information systems (GIS) to analyze cities and better understand crucial urban concepts such as urban growth and development, patterns of urban form, segregation and neighborhood change, economic specialization and agglomeration, urban sprawl, and environmental justice. (Cross-listed with GEOG 4120).

GEOG 8130 SEMINAR IN ECONOMIC GEOGRAPHY (3 credits)

A seminar course which investigates the development of current world economic systems through the elements of primary, secondary, tertiary, quarternary and quinary production on a micro and macro scale. Exchange and transactional systems, consumption linkages, resource management, economic health on global and local scales, and location decision-making are major topics.

Prerequisite(s)/Corequisite(s): Graduate in geography and permission of instructor

GEOG 8156 GEOGRAPHY, GENDER AND ENTREPRENEURSHIP (3 credits)

An advanced seminar focused on links among geography, gender and work, emphasizing leadership and entrepreneurship. The course considers theory and method in addition to empirical work. The nature of space, of gender, and of work, are examined. Topics include the gendering of work, the geography of entrepreneurship, gender and leadership. (Cross-listed with WGST 4150, GEOG 4150, ENTR 4150, ENTR 8156, WGST 8156).

Prerequisite(s)/Corequisite(s): Junior, senior, or graduate standing, or permission of instructor.

GEOG 8166 URBAN SUSTAINABILITY (3 credits)

Using sustainability as a conceptual framework, students in this course will investigate a variety of social, economic, and environmental challenges facing cities of the 21st century. Topics and issues explored include urban growth and expansion, livability, equity & gentrification, energy use & production, urban farming, poverty, automobility & transportation, water security, urban pollution, and the role of cities in climate change. (Cross-listed with GEOG 4160)

Prerequisite(s)/Corequisite(s): Graduate standing.

GEOG 8176 ADVANCED CULTURAL GEOGRAPHY (3 credits)

This course examines current theoretical debate and research practice in a select topic in Cultural Geography. Emphasis will be on readings and discussion with students engaging in original research. Specific thematic focus will vary from year to year. This course may be taken multiple times as long as topics differ. (Cross-listed with GEOG 4170).

Prerequisite(s)/Corequisite(s): Graduate standing and permission of the instructor.

GEOG 8210 SEMINAR IN CULTURAL GEOGRAPHY (3 credits)

The philosophy of cultural and historical geography with emphasis on describing and interpreting the cultural landscape.

Prerequisite(s)/Corequisite(s): Permission

GEOG 8236 GREAT PLAINS & NEBRASKA (3 credits)

A study of the major physical and cultural attributes of the region. Emphasizes settlement history and the role of agriculture on the regional economy. (Cross-listed with GEOG 4230).

GEOG 8266 PROCESS GEOMORPHOLOGY (4 credits)

A lecture and laboratory course focused on understanding Earth surface processes and the evolution of landforms across spatial and temporal scales. The course emphasizes applying unifying concepts in geomorphology, quantitative methodology and modern process-oriented geomorphology to interpret landscape evolution. (Cross-listed with GEOG 4260, GEOL 4260).

Prerequisite(s)/Corequisite(s): GEOL 1010, GEOL 1170, GEOG 1030, GEOG 1050 or instructor permission.

GEOG 8310 GEOGRAPHY OF AGRICULTURE (3 credits)

A systematic study of the characteristics and patterns of world agriculture.

Prerequisite(s)/Corequisite(s): Permission

GEOG 8326 CLIMATOLOGY (3 credits)

A study of climatic processes and their effect on shaping the physical landscape. Emphasis on physical and applied aspects of the field. (Cross-listed with GEOG 4320).

Prerequisite(s)/Corequisite(s): GEOG 1030, GEOG 1050, GEOG 3510, or permission of instructor.

GEOG 8336 SOIL GENESIS, MORPHOLOGY AND CLASSIFICATION (4 credits)

This course is designed to familiarize students with basic soil chemical, physical and biological properties, soil morphological characteristics, soil classification and soil forming processes. The course focuses on relationships between soils and environmental factors and how such factors alter soil forming processes. The lab will focus on developing basic field skills, including soil morphological descriptions and soil mapping, as well as common laboratory methods used to analyze soils. (Cross-listed with GEOG 4330, GEOL 4330).

GEOG 8346 WATER RESOURCES (3 credits)

A study of the applied principles of hydrology, water systems modeling, river basin development, and water management issues and practices in the United States and other parts of the world. Two local Saturday field trips will be required. (Cross-listed with GEOG 4340).

Prerequisite(s)/Corequisite(s): Six hours of Physical Geography or equivalent and graduate standing.

GEOG 8500 SPECIAL TOPICS IN GEOGRAPHY (1-3 credits)

This course will provide for an in-depth study of a geographical or geological subject (as specified in the course subtitle). Subjects will be offered as sections of GEOG 8500, but will be separate from one another. Students may repeat GEOG 8500 as often as they like as long as no specific subject is duplicated. Course to be offered with approval of Graduate Program Committee and Dean for Graduate Studies.

Prerequisite(s)/Corequisite(s): Variable

GEOG 8535 CARTOGRAPHY AND GIS (2 credits)

An introduction to the concepts and techniques of map construction and computer-based geographic information systems. Topics include map scale, map projections, thematic cartography, history of cartography, computer mapping, and global positioning systems. Particular attention is given to the processing and presentation of spatial data by the computer and the distribution of maps through the Internet. (Cross-listed with GEOG 3530).

Prerequisite(s)/Corequisite(s): GEOG 1000 or GEOG 1020 and GEOG 1030 or GEOG 1050, a statistics course, and a programming course.

GEOG 8536 HISTORICAL GEOGRAPHY OF THE UNITED STATES (3 credits)

An analysis of historical circumstances behind contemporary patterns of American cultural geography. (Cross-listed with GEOG 4530).

Prerequisite(s)/Corequisite(s): Graduate and HIST 1110 and HIST 1120 or GEOG 1020 or GEOG 3330.

GEOG 8545 CARTOGRAPHY & GIS LAB (2 credits)

An introduction to the methods and techniques of map construction using both graphic design and geographic information system software. Topics include map design for both general reference and thematic maps. Particular attention is given to the processing, compilation, data classification, and symbolization of various types of spatial data. This course is the lab component of GEOG 8535.

Prerequisite(s)/Corequisite(s): Concurrent or previous registration in GEOG 8535.

GEOG 8556 GEOGRAPHY OF ECONOMIC GLOBALIZATION (3 credits)

A study of the geography of economic globalization and the geography of the world economy. The major topics include the historical development of the world economy and globalization from the geographical perspective, trends in geography of global production, trade and investment, the most important factors and actors in the globalization processes and its geographic effects, geography of transnational corporations, case studies of economic geography of selected industries and service activities, effects of globalization on the developed and developing countries. This course also supports the Cultural and Global Analysis concentration in the Master of Arts in Critical and Creative Thinking. (Cross-listed with GEOG 4550, CACT 8116).

Prerequisite(s)/Corequisite(s): Graduate status.

GEOG 8600 INDEPENDENT RESEARCH (1-3 credits)

Advanced study in the form of a major research project. Students are required to submit a written proposal and gain written approval of the supervising faculty member and Graduate Program Committee. In addition to a formal written report, the student is required to make an oral presentation of research results to General Seminar or a professional meeting.

Prerequisite(s)/Corequisite(s): Fifteen graduate hours in geography and permission.

GEOG 8616 ENVIRONMENTAL MONITORING AND ASSESSMENT (3 credits)

An interdisciplinary approach to techniques for the design and implementation of environmental inventory and monitoring schemes used to evaluate natural resources. Students work as teams to synthesize information from their backgrounds in geography, geology and ecology to evaluate the impacts of human actions on environmental quality following the framework for environmental assessments provided by the National Environmental Policy Act. Course is organized to accommodate variable needs of students with different backgrounds and career choices. Usually offered every year. (Cross-listed with BIOL 4610, ENVN 4610, GEOG 4610, GEOL 4610, GEOL 8616)

Prerequisite(s)/Corequisite(s): Permission of instructor.

GEOG 8626 GEOGRAPHICAL FIELD STUDIES (3 credits)

Field experience course based on variable topics and themes. Students must attend the multiple day field trip that will require overnight stays. (Cross-listed with GEOG 4620).

Prerequisite(s)/Corequisite(s): Instructor Permission. Not open to non-degree graduate students.

GEOG 8636 ENVIRONMENTAL REMOTE SENSING (4 credits)

An introduction to remote sensing science and technology. Emphasis will be placed on multispectral data, matter/energy interactions, sensor system characteristics, photogrammetry, image interpretation, digital image processing and environmental applications. Formal laboratory instruction will provide students with problem-solving skills and hands-on experience with remote sensing and GIS software. (Cross-listed with GEOG 4630).

Prerequisite(s)/Corequisite(s): GEOG 1060 or GEOG 1070 or GEOL 1170. Introductory statistics highly recommended.

GEOG 8640 REMOTE SENSING ADVANCED CONCEPTS AND APPLICATIONS (3 credits)

Designed for the graduate student desiring to do advanced work in remote sensing. The emphasis of the course is on non-photographic sensors and especially digital processing of multispectral satellite data. The applications are multidisciplinary in nature.

Prerequisite(s)/Corequisite(s): GEOG 4120 / GEOG 8126

GEOG 8646 CRITICAL ZONE SCIENCE (4 credits)

This course examines the Critical Zone (CZ), Earth's permeable layer that extends from the top of vegetation to the bottom of groundwater. The CZ is a constantly evolving layer where rock, soil, water, air, and living organisms interact to regulate the landscape and natural habitats; it also determines the availability of life-sustaining resources, including our food production and water quality. CZ science is an interdisciplinary and international endeavor focused on cross-disciplinary science. In this course, we will focus on using data available from the existing National Science Foundation (NSF)-funded CZ Observatories (CZOs) along with readings, discussions and activities to explore interactions within the CZ. (Cross-listed with GEOG 4640, GEOL 4640)

Prerequisite(s)/Corequisite(s): GEOL 1170, GEOL 1010, GEOG 1030 or GEOG 1050; one chemistry or physics course recommended; or instructor permission.

GEOG 8650 LAND USE (3 credits)

A field course designed to understand, by actual field investigation, land use patterns in urban areas through the comprehension of social, physical and economic factors which tend to shape the land use of a given place. The major emphasis will be placed upon field investigations in the urban area, with the functional region receiving the major consideration.

Prerequisite(s)/Corequisite(s): GEOG 4120/ GEOG 8126

GEOG 8666 GEOGRAPHIC INFORMATION SYSTEMS II (4 credits)

An introduction to advanced geographic information systems (GIS) topics. Emphasis will be placed on algorithms and analysis for information extraction. Topics include spatial interpolation, remote sensing GIS integration, software development, spatial analysis, GIS modeling, and future advances in GIS. Formal laboratory instruction will provide students with GIS experience to solve application problems. (Cross-listed with GEOG 4660).

Prerequisite(s)/Corequisite(s): GEOG 4050/ GEOG 8056

GEOG 8670 CARTOGRAPHIC METHODS (3 credits)

Teaches effective map layout and the latest cartographic techniques, leading to a high level of competence in the design and interpretation of maps.

GEOG 8680 SEMINAR IN GEOSPATIAL SCIENCE (3 credits)

Seminar in Geospatial Science examines the origins, development and prospects of spatial information technology to understand people, places, and processes of the earth. The overall approach is to examine the three main components of geospatial science: 1) Geographic Information Systems (GIS), the software, hardware, outputs, personnel, and practices that together facilitate the analysis and mapping of geographic entities and phenomena; 2) Remote Sensing, the use and processing of aerial photographs and satellite imagery; and 3) Cartography, the general processing and display of geographic information for both analysis and communication.

Prerequisite(s)/Corequisite(s): Graduate standing. Prior coursework in geographic information systems, remote sensing or cartography.

GEOG 8700 RESEARCH METHODS (3 credits)

A course designed to provide students with an overview of the discipline of geography with two purposes in mind: (1) a graduate-level introduction to the chief issues and concepts on the research frontiers of geography; and (2) preparation by the graduate students to begin their own thesis research.

GEOG 8800 INTERNSHIP IN ENVIRONMENTAL/REGIONAL PLANNING (1-6 credits)

(repeatable up to six hours) Internship with local planning agencies enabling students to gain knowledge and experience in comprehensive regional or environmental planning.

Prerequisite(s)/Corequisite(s): Permission and 12 graduate hours in geography.

GEOG 8810 SEMINAR IN METROPOLITAN PLANNING (3 credits)

An overview of metropolitan planning with special emphasis on the planning process and current problems encountered by planning officials.

Prerequisite(s)/Corequisite(s): Permission

GEOG 8826 INTRODUCTION TO ENVIRONMENTAL LAW & REGULATIONS (3 credits)

Seminar on environmental law and regulation. The course will address federal regulations, implementing instructions, legal principles, and requirements. The major federal environmental laws, air and water quality, solid and hazardous waste, and pollution prevention and remediation will be discussed. Usually offered Fall semesters. (Cross-listed with BIOL 4820, BIOL 8826, GEOG 4820, ENVN 4820, PA 4820, PA 8826).

Prerequisite(s)/Corequisite(s): Junior-senior and permission.

GEOG 8830 SEMINAR IN URBAN STUDIES (3 credits)

This course provides an interdisciplinary overview of the forces influencing and influenced by urbanization and urbanism. (Cross-listed with UBNS 8000)

Prerequisite(s)/Corequisite(s): Not open to non-degree graduate students.

GEOG 8840 DIRECTED RESEARCH IN URBAN STUDIES (3 credits)

The course is intended for advanced graduate students in urban studies. It is especially suited for those in-career students who have had their internships waived and who might profit more by in-depth research on a problem of urban studies rather than additional classroom courses. (Cross-listed with UBNS 8940).

Prerequisite(s)/Corequisite(s): Completed 9 graduate hours in Urban Studies. Permission from the School.

GEOG 8990 THESIS (1-6 credits)

Independent research project written under the supervision of an adviser.