**GEOGRAPHY (GEOG)**

**GEOG 101 — INTRODUCTION TO HUMAN GEOGRAPHY**  
4 credits.

Human geographers explore socio-spatial relations, processes and representations of the world in which we live. This course engages economic, political, urban, socio-cultural and environmental geographic perspectives to investigate patterns and processes that have come to be associated with "globalization".  
**Requisites:** Open to Fr  
**Course Designation:** Gen Ed - Communication Part B  
**Breadth - Social Science**  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG 104 — INTRODUCTION TO HUMAN GEOGRAPHY**  
3 credits.

Human geographers explore socio-spatial relations, processes and representations of the world in which we live. This course engages economic, political, urban, socio-cultural and environmental geographic perspectives to investigate patterns and processes that have come to be associated with "globalization". This course does not carry Com-B credit.  
**Requisites:** Open to Fr.  
**Course Designation:** Breadth - Social Science  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG/ENVIR ST 120 — INTRODUCTION TO THE EARTH SYSTEM**  
3 credits.

Introduces students to how the Earth system works and what makes Earth livable. Through this course you will gain a deeper appreciation for how the atmosphere, oceans, life, and earth's surface interact to shape our local, regional and global landscapes. Many students take this course to fulfill their physical science requirement. Others use it as a gateway to majors and careers in Geography, Environmental Studies, and Environmental Science.  
**Requisites:** Not open to students with credit for GEOG/ENVIR ST/ GEOG 127  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG/ATM OCN/ENVIR ST 121 — ATMOSPHERIC ENVIRONMENT AND SOCIETY**  
2 credits.

Changing interactions between humans, other animals and plants, and the atmospheric environment, both in time and space.  
**Requisites:** Open to Fr  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2009

**GEOG/ENVIR ST 127 — PHYSICAL SYSTEMS OF THE ENVIRONMENT**  
5 credits.

Climatic regimes, landforms, soils, waters and life forms at the earth's surface in terms of energy-transforming processes, locational patterns, and changes through time.  
**Requisites:** Open to Freshmen not open to those with GEOG/ENVIR ST 120, 123, 124, or 125 credit or ILS 132 credit  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG/ENVIR ST 139 — LIVING IN THE GLOBAL ENVIRONMENT: AN INTRODUCTION TO PEOPLE-ENVIRONMENT GEOGRAPHY**  
3-4 credits.

This course provides an exploration of the global and local nature of environmental problems facing us, including issues of climate change, food, energy, economic globalization, deforestation and land use change, biodiversity loss, resource scarcity and access, environmental justice, and population. Through group and individual work, this course considers how we should analyze and act on environmental problems as we confront the apparently daunting scale of such issues. The theme of this course is that what appear to be single global environmental problems are actually composed of many smaller context-specific and place dependent problems or conflicts. Through an interdisciplinary and geographic perspective, these can be understood and addressed at the scale of our lived lives.  
**Requisites:** None  
**Course Designation:** Breadth - Social Science  
**Level - Elementary**  
**L&S Credit - Counts as Liberal Arts and Science credit in L&S**  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017
GEOG 170 — OUR DIGITAL GLOBE: AN OVERVIEW OF GISCIENCE AND ITS TECHNOLOGY
3 credits.

Non-specialist course providing an overview of the collection, representation and use of geospatial data. Introduces students to geospatial technologies like GPS, Google Earth, satellite image, and GIS, and provides a critical understanding of the strengths and limitations of spatial representations (e.g., maps, images).

Requisites: None
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Fall 2017

GEOG 198 — DIRECTED STUDY
1-2 credits.

Graded on a Cr/N basis; requires cons inst
Requisites: Open to Fr So.
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: Yes, unlimited number of completions
Last Taught: Summer 2013

GEOG 199 — DIRECTED STUDY
1-2 credits.

Graded on a lettered basis; requires cons inst
Requisites: Open to Fr So.
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: Yes, unlimited number of completions
Last Taught: Summer 2004

GEOG/ENVIR ST/SOIL SCI 230 — SOIL: ECOSYSTEM AND RESOURCE
3 credits.

Soils are fundamental to ecosystem science. A systems approach is used to investigate how soils look and function. Topics investigated include soil structure, biology, water, fertility, and taxonomy as well as the human impact on the soil environment.

Requisites: Not open to students with credits in SOIL SCI 301
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Spring 2017

GEOG/HISTORY/LCA/POLI SCI/SOC 244 — INTRODUCTION TO SOUTHEAST ASIA: VIETNAM TO THE PHILIPPINES
4 credits.

Southeast Asian history, religion, folklore and literatures, educational systems, and politics from the early classical states to contemporary social, literary, and political developments.

Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Fall 2017

GEOG/HISTORY/LCA/POLI SCI/SOC 252 — THE CIVILIZATIONS OF INDIA-MODERN PERIOD
4 credits.

Contemporary India society as a joint product of the classical heritage and world-wide movements toward nationalism; social and economic development.

Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Spring 2017

GEOG/HISTORY/POLI SCI/SLAVIC 253 — RUSSIA: AN INTERDISCIPLINARY SURVEY
4 credits.

Comprehensive interdisciplinary survey of Russian civilization from its beginnings through the present day.

Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Spring 2017

GEOG/HISTORY/POLI SCI/SLAVIC 254 — EASTERN EUROPE: AN INTERDISCIPLINARY SURVEY
4 credits.

Comprehensive interdisciplinary survey of East European culture, society, politics, and literature from its beginnings to the present day.

Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatability for Credit: No
Last Taught: Spring 2016
GEOG/AFROAMER/ANTHRO/C&E SOC/HISTORY/LACIS/POLI SCI/SOC/SPANISH 260 — LATIN AMERICA: AN INTRODUCTION
3-4 credits.
Latin American culture and society from an interdisciplinary perspective; historical developments from pre-Columbian times to the present; political movements; economic problems; social change; ecology in tropical Latin America; legal systems; literature and the arts; cultural contrasts involving the US and Latin America; land reform; labor movements; capitalism, socialism, imperialism; mass media.
Requisites: None
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG/AFRICAN/AFROAMER/ANTHRO/HISTORY/POLI SCI/SOC 277 — AFRICA: AN INTRODUCTORY SURVEY
4 credits.
African society and culture, polity and economy in multidisciplinary perspectives from prehistory and ancient kingdoms through the colonial period to contemporary developments, including modern nationalism, economic development and changing social structure.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 301 — GEOGRAPHY OF SOCIAL ORGANIZATION
3 credits.
Culture, culture group, ethnicity, communication, and allied concepts as these relate to cultural geography.
Requisites: Not open to Fr
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 302 — ECONOMIC GEOGRAPHY: LOCATIONAL BEHAVIOR
4 credits.
Classic location theory with modern extensions. Examination of theoretical statements and selected empirical examples. Principles of economic regionalization and network analysis with emphasis on spatial implications of the economic development process.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2009

GEOG/URB R PL 305 — INTRODUCTION TO THE CITY
3-4 credits.
Investigates urbanization as a general process, as well as the resulting contemporary physical, social, cultural and political-economic forms of cities. As an ethnic studies class, emphasis will be placed on the history and current forms of spatial and social segregation of cities by race, class, ethnicity, and gender. The myriad ways that cities have addressed the tensions emerging from this history of spatial and social segregation will be highlighted. Further, emphasis will be placed on understanding the experiences of those most-affected by historical and continuing segregation.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG/ENVIR ST 309 — PEOPLE, LAND AND FOOD: COMPARATIVE STUDY OF AGRICULTURE SYSTEMS
3 credits.
Introduction to how and why humans have transformed natural landscapes around the world, including tropical deforestation. Exploration of different agricultural systems, and topics such as food security, land scarcity, bioenergy and the impacts of food production on the environment.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

GEOG 318 — INTRODUCTION TO GEOPOLITICS
3 credits.
Introduction to the contemporary study of geopolitics, featuring the main concepts and research themes encountered in this field. Examine the formation of geopolitical images of the world, where these images come from, and how they have shaped our thinking and politics over time.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 319 — ENVIRONMENTAL EVALUATION AND ADAPTATION
3 credits.
The study of how human beings make sense of geographic reality; how they make worlds out of environments.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2008
GEOG/GEOSCI 320 – GEOMORPHOLOGY  
3 credits.

Principles and analysis of geomorphic processes and resulting land forms. Field trip.  
**Requisites:** One of the following: GEOSCI 100, 101, 106, 109, 204, GEOG/ENVIR ST 120, 127  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2017

GEOG 321 – CLIMATOLOGY  
3 credits.

Elements and controls of climate and the distribution of world climates. Emphasis on regional dynamic climatology.  
**Requisites:** GEOG/ENVIR ST 120, 121, 125, 127 or ILS 132 or Meteor 100 or cons inst  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2010

GEOG/ATM OCN 323 – SCIENCE OF CLIMATE CHANGE  
3 credits.

This is a calculus-based treatment of climate system physics and the mechanisms of modern-day anthropogenic climate change. By the end of this course, students will understand: a. How solar radiation and rotating fluid dynamics determine the basic climate state; b. Mechanisms of natural variability and change in climate; c. Why anthropogenic climate change is occurring; and d. Which scientific uncertainties are most important to estimates of 21st century change. Not open to students who have enrolled in ATM OCN 425  
**Requisites:** PHYS 103, 201 or 207; and MATH 217, 221 or 275.  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2016

GEOG/ENVIR ST 325 – ANALYSIS OF THE PHYSICAL ENVIRONMENT  
4 credits.

Selected associations of natural and human environments illustrative of the broad principles of physical geography. Practical application of data collection and the use of laboratory and field methods to Wisconsin examples employing quantitative and nonquantitative analytical methods; field trips; lab section.  
**Requisites:** Any intro crse in phy geog or phy geol or meteor or cons inst  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2010

GEOG/GEOSCI 326 – LANDFORMS-TOPICS AND REGIONS  
3 credits.

Emphasis on natural and human processes that control the morphology of the land and its waterways. When taught by Knox, major emphasis on surface water hydrology, erosion, sedimentation, and physical characteristics of streams and rivers.  
**Requisites:** Intro phy geog or phy geosci crse, or cons inst  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2016

GEOG 329 – LANDFORMS AND LANDSCAPES OF NORTH AMERICA  
3 credits.

Regional variation of landforms and physical landscapes in North America; processes and forms that give character to physiographic regions.  
**Requisites:** GEOG/ENVIR ST 120 or 127 or Geol 100 or 101 or cons inst  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2016
GEOG/ATM OCN/ENVIR ST/GEOSCI 332 — GLOBAL WARMING: SCIENCE AND IMPACTS
3 credits.

Climate change is underway and will continue into the foreseeable future. This course offers a fundamental understanding of how and why global warming is happening, and what to expect in the future. Together, we will investigate and discuss the evidence for change, the science that explains these observations, predicted impacts on humans and ecosystems, and the societal debate over proposed solutions. Freshmen permitted only with consent of instructor

Requisites: Geog/IES 120 or 127 or ATM OCN 100 or equivalent recommended.

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG/ATM OCN/ENVIR ST/GEOSCI 335 — CLIMATIC ENVIRONMENTS OF THE PAST
3 credits.

Climatic change at timescales from the last 1,000,000 years to the last 1000 years. Examines how climate variability arises from interplay between external forcings, feedbacks within the earth system, and (more recently) human activity.

Requisites: ENVIR ST/GEOG/ENVIR ST 120, ENVIR ST/GEOG/ENVIR ST 127, or ATM OCN 100
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG/ENVIR ST 337 — NATURE, POWER AND SOCIETY
3 credits.

Explores the links between nature, power and society in today's world.
The course considers the complex relationships between humans and the earth's resources, including food, energy, physical materials, water, biota, and landscapes; it considers issues linked to population and scarcity, resource tenure, green consumerism, political economy, environmental ethics, risks and hazards, political ecology, and environmental justice. Not open to students who took Geog/Env 139 in 2010-11, 2011-12 or 2012-13.

Requisites: Sophomore standing.
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2015

GEOG/BOTANY 338 — ENVIRONMENTAL BIOGEOGRAPHY
3 credits.

This course will explore how physical and biological factors affect the distribution of terrestrial biomes, ecosystem types, and biodiversity, as well as the role of disturbance and recent human activities on differences in past and modern day species distributions.

Requisites: GEOG/ENVIR ST 120, 127 or consent of instructor
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG/ENVIR ST 339 — ENVIRONMENTAL CONSERVATION
4 credits.

Examines major environmental conservation approaches in the U.S. and developing countries and how they are influenced by sociopolitical factors, cultural values and scientific understandings of nature. Historical and contemporary cases are explored with emphasis on biodiversity and climate change issues.

Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 340 — WORLD REGIONS IN GLOBAL CONTEXT
3 credits.

Survey of development and change within each of the world's regions (e.g., Africa, Southeast Asia). Attention devoted to environment and society; history, economy, and demographic change; culture and politics; future challenges; key actors. Online course.

Requisites: Sophomore standing; not open to students who have taken GEOG 140
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 342 — GEOGRAPHY OF WISCONSIN
3 credits.

Overview of the physical and human geography of Wisconsin, with an emphasis on the physical, historical, and cultural processes that shaped the Badger State.

Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017
GEOG 344 — THE AMERICAN WEST
3 credits.
Regional geography of Western United States: Natural and human characteristics, landscape features, land use issues, perception of area as region.
Requisites: Not open to Freshmen
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 348 — LATIN AMERICA
4 credits.
A topical and historical survey of the cultural ecology and human geography of Middle America and South America.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 349 — EUROPE
3 credits.
A topical overview of people-environment interaction, migration, culture, urbanization, political organization and integration.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015

GEOG 353 — RUSSIA AND THE NIS-TOPICAL ANALYSIS
3 credits.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 355 — AFRICA, SOUTH OF THE SAHARA
3 credits.
Physical and human distributions and interrelationships, with emphasis on the spatial processes and patterns of modernization.
Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

GEOG 359 — AUSTRALIA: ENVIRONMENT AND SOCIETY
3 credits.
An introduction to the human and environmental geography of Australia. Australia is a settler country, the scene of indigenous genocide, a former English colony, a mythical unknown, a biophysical puzzle, home to a startling diversity of life, a cradle of modern democracy, and a powerful industrial economy with a rich resource base. It thus serves in many ways as a mirror for the US - even matching the US roughly in size, if not in population. The two countries share many elements of a common history and biogeography and yet the human and environmental geographies of the two countries have traced very different paths into the modern world. This course provides a survey of Australian geology, ecology, society or culture. It will include weekly check-ins with current events in Australia and exercises that connect students to current resource management problems using Google Earth and other tools.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 358 — HUMAN GEOGRAPHY OF SOUTHEAST ASIA
3 credits.
This survey course is designed to introduce intermediate undergraduate students to the Human Geography of Southeast Asia, including the basic geography and history of the region, important political and theoretical issues, and policies and positionings of relevance for understanding the spatiality of the region, including the ways that ethnicity and indigeneity are playing out in Southeast Asia and amongst Southeast Asians in the USA.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 360 — QUANTITATIVE METHODS IN GEOGRAPHICAL ANALYSIS
4 credits.
Application of descriptive and inferential statistics to geographical problems.
Requisites: So st; completion of QRA
Course Designation: Gen Ed - Quantitative Reasoning Part B
Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2016
GEOG 370 — INTRODUCTION TO CARTOGRAPHY
4 credits.

A broad introduction to cartography emphasizing the theory and practice of map-making. Topics include the basics in mapping (e.g., scale, spatial reference systems, projections), data acquisition, key techniques for thematic mapping, and principles of cartographic abstraction and design.

**Requisites:** Sophomore standing or consent of instructor

**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

GEOG/ENVIR ST/F&W ECOL/G L E/GEOSCI/LAND ARC 371 — INTRODUCTION TO ENVIRONMENTAL REMOTE SENSING
3 credits.

Introduction to the Earth as viewed from above, focusing on use of aerial photography and satellite imagery to study the environment. Includes physical processes of electromagnetic radiation, data types and sensing capabilities, methods for interpretation, analysis and mapping, and applications.

**Requisites:** MATH 114 Sophomore standing

**Course Designation:** Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

GEOG/ENVIR ST/F&W ECOL/G L E/GEOSCI/LAND ARC 372 — INTERMEDIATE ENVIRONMENTAL REMOTE SENSING
3 credits.

Examines intermediate-level concepts in information extraction, data processing and radiative transfer relevant to remote sensing of the environment. Includes transforms, image correction, classification algorithms and change detection, with emphasis on applications for land use planning and natural resource management.

**Requisites:** Envir St 301 or consent of instructor, sophomore standing

**Course Designation:** Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2015

GEOG/CIV ENGR/ENVIR ST 377 — AN INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS
4 credits.

Design, implementation and use of automated procedures for storage, analysis and display of spatial information. Covers data bases, information manipulation and display techniques, software systems and management issues. Case studies. Meets with Civil Environmental Engineering 357.

**Requisites:** Sophomore standing

**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

GEOG 378 — INTRODUCTION TO GEOCOMPUTING
4 credits.

Introduction to scripting for Geographic Information Science. Geoprocessing with open-source GIS utilities. Phyton scripting with ArcGIS and open-source libraries.

**Requisites:** GEOG/CIV ENGR/ENVIR ST 377 or equivalent (may be taken concurrently)

**Course Designation:** Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

GEOG 399 — INDEPENDENT STUDY
1-3 credits.

Designed to provide between 1 and 3 credits for independent study in Geography under direct guidance of a faculty member. It is designated for study at the intermediate level, meaning that it will be appropriate for students’ initial exploration of an area of scholarship in Geography through laboratory, field, or literary study.

**Requisites:** Consent of instructor

**Course Designation:** Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

GEOG 401 — SEMINAR
3 credits.

Exploration and analysis of a topic in human geography, including themes involving location analysis, regional and global studies, space and place, religion and morality, and people-environment linkages.

**Requisites:** Appropriate intermediate level course, or cons inst

**Course Designation:** Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2009

GEOG/GEOSCI 420 — GLACIAL AND PLEISTOCENE GEOLOGY
3 credits.

Principles, characteristics and work of glaciers; events of the Pleistocene. Field trip.

**Requisites:** GEOSCI 100, 101, 106 or 109 or GEOG/ENVIR ST 120

**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017
**GEOG/C&E SOC/ENVIR ST 434 — PEOPLE, WILDLIFE AND LANDSCAPES**  
3 credits.

This course explores the relationship between humans and wildlife amidst diverse landscapes, both historic and contemporary, tropical and temperate. We study how humans shape wild animal populations by modifying physical environments, and by hunting, domesticating and introducing species.  
**Requisites:** Geog/ENVIR ST/GEOG 339  
**Course Designation:** Breadth - Social Science  
**Level:** Advanced  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2017

**GEOG/ENVIR ST 439 — US ENVIRONMENTAL POLICY AND REGULATION**  
3-4 credits.

This course covers a broad cross-section of American environmental policy by focusing on specific statutes and policy arenas. In this course we will survey the basic elements of American environmental policy and regulation with a particular focus on the specific people, sites and scales at which environmental decision-making happens through primary-source case material. Understanding environmental outcomes in a complex society depends on observing both the structure of regulations and the geographic and social context in which such regulations emerge. This course will maintain a dual focus on (a) the legal and regulatory aspects of environmental regulation and (b) the specific geographic and social features of actual cases in which regulations and policy are used.  
**Requisites:** None  
**Course Designation:** Breadth - Social Science  
**Level:** Intermediate  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2016

**GEOG/ENVIR ST/HISTORY 460 — AMERICAN ENVIRONMENTAL HISTORY**  
4 credits.

Survey of interactions among people and natural environments from before European colonization to present. Equal attention to problems of ecological change, human ideas, and uses of nature and history of conservation and environmental public policy.  
**Requisites:** So st  
**Course Designation:** Breadth - Either Humanities or Social Science  
**Level:** Intermediate  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG/ENVIR ST/HISTORY 469 — THE MAKING OF THE AMERICAN LANDSCAPE**  
4 credits.

Surveys the historical geography and environmental history of the United States by tracing the evolution of the American landscape from precolonial times to the present, with special emphasis on teaching students skills they can use to interpret landscape history themselves.  
**Requisites:** Sophomore standing or one course in HISTORY, GEOG or ENVIR ST  
**Course Designation:** Breadth - Either Humanities or Social Science  
**Level:** Intermediate  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2016

**GEOG 475 — TOPICS IN GEOGRAPHY**  
1-4 credits.

Subject matter, credits and prerequisites vary.  
**Requisites:** Varies  
**Course Designation:** Level - Intermediate  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Repeatable for Credit:** Yes, unlimited number of completions  
**Last Taught:** Spring 2017

**GEOG 500 — QUALITATIVE STRATEGIES IN GEOGRAPHY**  
3 credits.

This seminar course surveys qualitative research and methods in geography, including the human subjects review process, research ethics, preparing for fieldwork, participant observation, interviewing, focus groups, filmic experiences, archival research, participatory action research, analyzing field materials and writing styles in qualitative research.  
**Requisites:** Students must have junior, senior or graduate standing to enroll for this class.  
**Course Designation:** Breadth - Social Science  
**Level:** Advanced  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2017

**GEOG 501 — SPACE AND PLACE: A GEOGRAPHY OF EXPERIENCE**  
3 credits.

Explore the concepts of space and place from the perspective of learning and everyday experience. Examines how space and place emerge out of fundamental human needs, experiences, and ways of thinking.  
**Requisites:** Jr st  
**Course Designation:** Breadth - Social Science  
**Level:** Advanced  
**L&S Credit:** Counts as Liberal Arts and Science credit in L&S  
**Grad 50%:** Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2017
GEOG/URB R PL 503 — RESEARCHING THE CITY: QUALITATIVE STRATEGIES
3 credits.
Explores, and applies, qualitative methods in the field of urban geography. An introduction to debates around the analysis and interpretation of qualitative data is provided, grounded in concrete urban research. Participation in a three-day field course is required.
Requisites: Jr st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2010

GEOG/URB R PL 505 — URBAN SPATIAL PATTERNS AND THEORIES
3 credits.
Various urban empirical regularities and theories which explain them.
Requisites: GEOG/URB R PL 305 or consent of instructor
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2015

GEOG/URB R PL 506 — HISTORICAL GEOGRAPHY OF EUROPEAN URBANIZATION
3 credits.
Historical geography of urban development in Europe from classical times to the post-World War II era, with emphasis on changes in built environment, public space and infrastructure, land use, and urban systems.
Requisites: Jr st
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2015

GEOG 508 — LANDSCAPE AND SETTLEMENT IN THE NORTH AMERICAN PAST
3 credits.
Historical geography of North American settlement patterns, cultural landscapes, regional identity and heritage.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2013

GEOG 510 — ECONOMIC GEOGRAPHY
4 credits.
Theoretical aspects of spatial economic distributions and locational analysis.
Requisites: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2014

GEOG 518 — POWER, PLACE, IDENTITY
3 credits.
Advanced political geography course that explores reconceptualizations of power, place, and identity, as well as the interactive forces at work that continually reshape place-making and the inter-related processes of identification and differentiation.
Requisites: So St
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG/GEOSCI 523 — QUATERNARY VEGETATION DYNAMICS
3 credits.
Geographic responses of plant species and terrestrial ecosystems to late-Quaternary environmental change, particularly changes in climate and carbon dioxide. Quaternary vegetation dynamics are relevant to understanding vegetational responses to the 21st-century climate change. Laboratory section emphasizes multivariate data analysis and vegetational modeling.
Requisites: Jr st GEOG/ENVIR ST 120/127 or equiv
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2013

GEOG/GEOSCI 524 — ADVANCED LANDFORM GEOGRAPHY
3 credits.
Purpose, methods, and content of analysis of landforms, with emphasis on quantitative descriptive regional variation, and functional relationships.
Requisites: Cons inst or Jr st
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2011
GEOG/SOIL SCI 525 — SOIL GEOMORPHOLOGY
3 credits.

Soil development as related to landscape throughout the Quaternary; focusing on the relationship of soils to climate and vegetation, landscape evolution, and time; principles of soil stratigraphy; case histories of soil geomorphic studies; field trips.

Requisites: SOIL SCI 325 or Geog/SOIL SCI 431; an intermediate level course in geomorphology; or cons inst

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Spring 2013

GEOG/SOIL SCI 526 — HUMAN TRANSFORMATIONS OF EARTH SURFACE PROCESSES
3 credits.

This course takes an earth systems approach to explore the role of human societies in shaping earth surface processes from local to global scales. We address how alterations to our landscapes and waterways affect biological, physical and chemical interactions among our biosphere, geosphere, hydrosphere and atmosphere. We discuss methods used to distinguish the “human impact” from background variability.

Requisites: Junior standing or GEOG/ENVIR ST/GEOG 120

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Spring 2016

GEOG/GEOSCI 527 — THE QUATERNARY PERIOD
3 credits.

Principles of Quaternary studies emphasizing terrestrial records and paleoecology of the past two million years and comparisons with the deep ocean record and models of climatic change.

Requisites: 1 intermediate-level course in physical geog or geosci; or consent of instructor

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Spring 2012

GEOG/ATM OCN/ENVIR ST 528 — PAST CLIMATES AND CLIMATIC CHANGE
3 credits.

Climatic change throughout geologic time, especially in the last 10 millennia; mechanisms of change, evidence, and criteria, paleogeography and paleoclimatology, climate models.

Requisites: Jr st or one year calculus-based college physics or introduction to weather and climate; or cons inst

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Fall 2014

GEOG/ENVIR ST 534 — ENVIRONMENTAL GOVERNANCE: MARKETS, STATES AND NATURE
3 credits.

This class is designed to help students answer real-world questions of how the environment is managed and governed through state policy, economics, and social institutions. We will cover strategies within and outside of the formal institutions of government, and extend the discussion to the commodification of nature and the use of science to understand and govern the environment. The last third of the class will consist of students engaging with case studies of environmental governance in water, carbon, species, and urban sustainability.

Requisites: GEOG/ENVIR ST/GEOG 339, GEOG/ENVIR ST/GEOG 439, or FW ECOL/ENVIR ST/F&W ECOL 515

Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Spring 2016

GEOG/ENVIR ST 537 — CULTURE AND ENVIRONMENT
4 credits.

Geographic approaches to culture-nature relationships, including human perception of, use of, and adaptation to the physical environment, with emphasis on traditional subsistence systems; selected topics from contemporary and historical sources.

Requisites: Geog/IES 339 or equiv

Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No
Last Taught: Spring 2017
GEOG 538 — THE HUMID TROPICS: ECOLOGY, SUBSISTENCE, AND DEVELOPMENT
4 credits.

Description and analysis of humid-tropical ecosystems, with emphasis on the relationships, production potential, and human modification of biotic resources.

Requisites: Jr st

Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2016

GEOG/ENVIR ST 557 — DEVELOPMENT AND ENVIRONMENT IN SOUTHEAST ASIA
3 credits.

Examines the political, socio-cultural, economic and ecological aspects of contemporary development and human-environment relations in mainland Southeast Asia, applying a critical and theoretically informed perspective, and focusing largely on rural issues.

Requisites: Sophomore standing

Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2017

GEOG 560 — ADVANCED QUANTITATIVE METHODS
3 credits.

Selected topics in the analysis of spatial distributions with emphasis on multivariate techniques.

Requisites: GEOG 360 or equiv; Jr st

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2017

GEOG 565 — COLLOQUIUM FOR UNDERGRADUATE MAJORS
3 credits.

Orientation to geography as a scholarly discipline; its development, objectives, essential concepts, methods of investigation, institutions, opportunities, problems, and trends.

Requisites: Geog majors or cons inst

Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Fall 2017

GEOG 566 — HISTORY OF GEOGRAPHIC THOUGHT
3 credits.

An analysis of the development and significance of basic geographic concepts and theories. Major emphasis on concepts of place, spatial relations, landscape, and human-environment relations.

Requisites: Junior standing

Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2016

GEOG 572 — GRAPHIC DESIGN IN CARTOGRAPHY
3-4 credits.

Study of the map as a graphic communication, the technical and perceptual aspects of its organization, symbolic coding, color and lettering.

Requisites: GEOG 370 or consent of instructor

Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2017

GEOG 574 — GEOSPATIAL DATABASE DESIGN AND DEVELOPMENT
4 credits.

Introduces the basic concepts, techniques and methodologies for designing and implementing a spatial database. The course prepares students for professional work as a GIS designer, analyst, specialist or researcher who uses spatial databases to store, manage and manipulate digital geographic data. Students learn how to design conceptual spatial database models, and how to implement them within specific spatial data management systems (DBMS). The course covers the basics of the SQL database language and the latest developments in database systems (e.g. NoSQL database) for managing and mining spatial big data such as social media datasets and GPS trajectories.

Requisites: GEOG/CIV ENGR/ENVIR ST 377
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2017
GEOG 575 — INTERACTIVE CARTOGRAPHY & GEOVISUALIZATION
4 credits.
Examines emerging topics related to the design of user interfaces for manipulating maps, focusing on new cartographic challenges in Interactive Cartography, Geographic Visualization, and Geovisual Analytics and drawing upon relevant insight in Human-Computer Interaction, Information Visualization, and Usability Engineering.
Requisites: GEOG 370 and COMP SCI 302, or consent of instructor
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 576 — GEOSPATIAL WEB AND MOBILE PROGRAMMING
4 credits.
This course is designed to cover the programming concepts and skills for understanding construction and implementation of high quality spatial web portal and mobile Apps to support geospatial data access, analysis, sharing, and synthesis over the internet. Previous java programming knowledge is not essential, but basic programming experience is required.
Requisites: Graduate standing OR one introductory GIS course (GEOG 170, GEOG 370 or GEOG/ENVIR ST/CIV ENGR/GEOG 377) and one programming course (GEOG 378, COMP SCI 301, COMP SCI 302, or COMP SCI 367)
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2017

GEOG 577 — ENVIRONMENTAL MODELING WITH GIS
3 credits.
This course focuses on environmental modeling using geographic information systems. The course provides an overview of physical environmental processes and focuses on the use of the GIS-techniques used to parameterize these processes. The discussion will be illustrated by widely used GIS-based environmental models.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or equiv GEOG/CIV ENGR/ENVIR ST 325 or equiv
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2009

GEOG 578 — GIS APPLICATIONS
4 credits.
Application and use of GIS techniques in physical and human geography. Includes an introduction to a generic framework of GIS applications, case studies, and student projects. Cases range from urban and regional geography, to marketing geography, and to physical and environmental geography.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 370, or equiv
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 579 — GIS AND SPATIAL ANALYSIS
4 credits.
Principles and algorithms for spatial analysis in geographic information systems. A theoretical and practical examination of analytical methods used in GIS, including point, line and polygon processing, interpolation, smoothing, spatial overlay and query, network analysis, terrain analysis, and classification.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or equiv, GEOG 360, or consent of instructor
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 602 — INTERNSHIP
1-2 credits.
Students may earn no more than two internship credits toward the 30-40 credits in geography.
Requisites: Stds should be declared Undergrad majors or Grad stdts in geography
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG 675 — SPECIAL TOPICS IN GEOGRAPHY
3 credits.
Topics vary.
Requisites: Jr, Sr, or Grad st, or cons inst
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017
GEOG 676 — SPECIAL TOPICS IN GEOGRAPHY
3 credits.

Topics vary.
Requisites: Jr, Sr, or Grad st, or cons inst
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2015

GEOG 681 — SENIOR HONORS THESIS
2-3 credits.

Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 682 — SENIOR HONORS THESIS
2-3 credits.

Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 691 — SENIOR THESIS
2-3 credits.

Requisites: Sr st and cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

GEOG 692 — SENIOR THESIS
2-3 credits.

Requisites: Sr st and cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

GEOG 698 — DIRECTED STUDY
1-3 credits.

Cr/N. Graded on a Cr/N basis; requires cons inst
Requisites: Jr or Sr st.
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

GEOG 699 — DIRECTED STUDY
1-3 credits.

Graded on a lettered basis; requires cons inst
Requisites: Jr or Sr st.
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG/POLI SCI/URB R PL 742 — INTERNATIONAL DEVELOPMENT PLANNING THEORY
3 credits.

Provides students with a historical and theoretical foundation for critical thinking about international development planning.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2008

GEOG 765 — GEOGRAPHICAL INQUIRY AND ANALYSIS: AN INTRODUCTION
1 credit.

Geographic perspectives and analyses: history of the discipline, issues and research frontiers, interests and perspectives of Madison faculty, structure of graduate study in the department, research facilities and opportunities.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 766 — GEOGRAPHICAL INQUIRY AND ANALYSIS: TECHNIQUES
1-3 credits.

Engaging in geographic research: analysis of successful proposals and published papers and books; different approaches to geographic research; writing of proposals for students' own research.
Requisites: Grad: 3 cr, undergrads: 1 cr; or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017
GEOG 777 — CAPSTONE IN GIS DEVELOPMENT
4 credits.

In this course students will work through a set of practical and challenging cases in GIS which require programming and other GIS development skills (such as geospatial algorithm development and implementation) to complete. The these cases cover the wide spectrum of GIS development projects in the GIS professions ranging from GIS data management, advanced spatial analysis, spatial database development and web/mobile programming, to cartography/geovisualization. Through these activities students will learn how to integrate the skills they learned from other courses into a GIS development project.

Requisites: GEOG 378, 572, 574, 575, 576, and 579
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 778 — PRACTICUM IN GIS DEVELOPMENT
4 credits.

The course learning objectives are: 1) To develop student's ability to conceive real world GIS development projects and design a plan for solving the projects; 2) To provide student the practical experience on managing GIS development projects; 3) To develop student's capacity to solve GIS development problems independently. Students taking this class will achieve these objectives in three stages. Stage 1: The students will be given a GIS development problem which will require them to define the context and the scope of a project to address this problem, to identify the key issues in solving this problems, and to develop implementation plan as well as to implement the plan. In this stage the students will be trained on their independence on developing strategies and solutions to the problems (issues) as they arise during the process of solving a GIS development project. Stage 2: The student is first asked to conceive, in consultation with the instructor(s), a project requiring substantial amount of GIS programming and development, and then to define the scope and to develop the implementation plan as well as to implement the plan for solving this GIS development project. During this stage, the students are trained to derive GIS development projects from real world situation on their own and solve the GIS development problems on their own. The instructors will act as the clients as well as technical advisors to the projects. Stage 3: students will summarize their experiences by reflections on various aspects of developing and implementing the above two projects to assess the learning outcomes for this classes and to provide recommendations for people who engage in this type of GIS development projects.

Requisites: GEOG 378, 572, 574, 575, 576, and 579
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 799 — INDEPENDENT READING
1-3 credits.

Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2016

GEOG 900 — SEMINAR IN GEOGRAPHY
1-3 credits.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2015

GEOG 901 — SEMINAR IN CULTURAL GEOGRAPHY
2-3 credits.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG 918 — SEMINAR IN POLITICAL GEOGRAPHY
2-3 credits.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG 920 — SEMINAR IN PHYSICAL GEOGRAPHY
1-3 credits.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG 930 — SEMINAR IN PEOPLE-ENVIRONMENT GEOGRAPHY
2-3 credits.

Analysis of people-nature links, including environmental issues, natural resources, and attitudes toward nature. Topics vary with each offering.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

GEOG/HISTORY 932 — SEMINAR IN AMERICAN ENVIRONMENTAL HISTORY
3 credits.

Surveys recent and classic works on American environmental history to introduce students to the methods and historiography of the field.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017
GEOG/AGRONOMY/ATM OCN/BOTANY/ENTOM/ENVIR ST/F&W ECOL/ZOOLOGY 953 — INTRODUCTION TO ECOLOGY RESEARCH AT UW-MADISON
1-2 credits.

This seminar course will introduce new graduate students to the diversity of ecologists across the UW-Madison campus. Course meetings will include discussions of key topics in professional development, research presentations by faculty members, and discussions of assigned papers with senior graduate students.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

GEOG 970 — SEMINAR IN GEOGRAPHIC INFORMATION SCIENCE
1-3 credits.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

GEOG/ATM OCN/BOTANY/ENVIR ST/F&W ECOL/GEOSCI/ZOOLOGY 980 — EARTH SYSTEM SCIENCE SEMINAR
1 credit.

Topics in earth system science. Emphasis on the coupling between atmospheric, oceanic and land surface systems, involving physical geochemical and biological processes, and including interactions with human systems.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

GEOG/A A E/ANTHRO/C&E SOC/HISTORY/LACIS/POLI SCI/PORTUG/SOC/SPANISH 982 — INTERDEPARTMENTAL SEMINAR IN THE LATIN-AMERICAN AREA
1-3 credits.

Interdisciplinary inquiry in Latin American society and culture.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG/AFRICAN/ANTHRO/ECON/HISTORY/POLI SCI 983 — INTERDEPARTMENTAL SEMINAR-AFRICAN STUDIES
3 credits.

Interdisciplinary inquiry in African society and culture.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

GEOG 990 — RESEARCH AND THESIS
1-9 credits.

Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

GEOG 999 — INDEPENDENT WORK
1-3 credits.

Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017