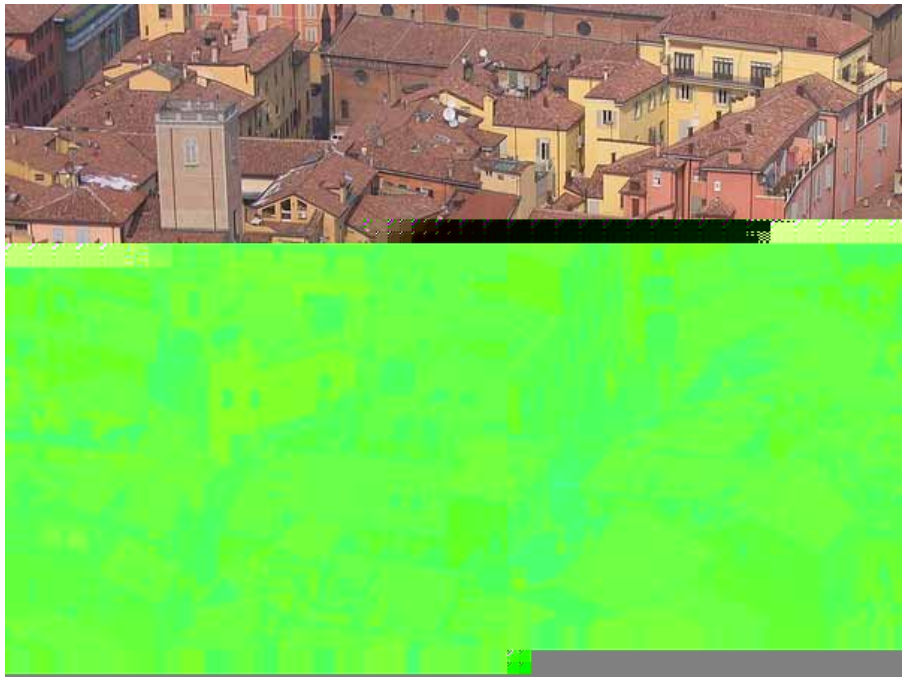
Cover image of houses in Bologna, Italy

DEPARTMENT of GEOGRAPHY
University of Wisconsin-Madison

CATALOG OF COURSE DESCRIPTIONS



Spring 2007-08

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Geography Courses Taught This Semester by Our Faculty

Amy Burnicki	170	Lisa Naughton	339
James Burt	360, 676	Kristopher Olds	Sabbatical
William Cronon		Robert Ostergren	349, 565, 901
Leila Harris	401	Jamie Peck	503
Mark Harrower	370, 575	Matthew Turner	766
Robert Kaiser	318, 501	Jack Williams	120, 523
James Knox	120, 326	A-Xing Zhu	377, 578
Joseph Mason	344, 527		

Our Faculty

JAMES E. BURT, 425 Science Hall, 262-4438, jburt@geography.wisc.edu; Ph.D.,U.C.L.A., 1980, Professor - Climatology, quantitative analysis, computer cartography.

WILLIAM CRONON, 443 Science Hall, 265-6023, wcronon@wisc.edu; Ph.D., Oxford, 1981, Frederick Jackson Turner Professor - Environmental history, environmental studies, North America (also History).

LEILA HARRIS, 115D Science Hall, 265-0531, lharris@geography.wisc.edu; Ph.D., Minnesota, 2004, Assistant Professor - Nature-society, environmental policy and management, water resources, gender and inequality, Middle East.

MARK HARROWER, 208 Science Hall, 265-0012, maharrower@wisc.edu; Ph.D., Penn State, 2002, Assistant Professor - Cartography, GIS, ,geovisualization.

ROBERT J. KAISER, 430 Science Hall, 262-1904, rjkaise1@wisc.edu; Ph.D., Columbia University, 1988, Professor - Political geography, nationalism, population geography, ethnic studies, Eurasia.

JAMES C. KNOX, 234 Science Hall, 262-1804, knox@geography.wisc.edu; Ph.D., Iowa, 1970, Evjue-Bascom Professor - Geomorphology, paleohydrology, water resources.

JOSEPH A. MASON, 207 Science Hall, 262-6316, mason@geography.wisc.edu; PhD., University of Wisconsin-Madison, 1995, Assistant Professor - Soils, geomorphology, quaternary paleoenvironments, GIS applications in geomorphology

LISA C. NAUGHTON, 373 Science Hall, 262-4846, naughton@geography.wisc.edu; PhD., University of Florida, 1996, Associate Professor - Wildlife ecology, protected areas, Africa, Latin America.

KRISTOPHER N. OLDS, 376 Science Hall, 262-5685, olds@geography.wisc.edu; Ph.D., University of Bristol, 1996, Associate Professor - Urban, economic, globalization, Pacific Rim.

ROBERT C. OSTERGREN, 343 Science Hall, 262-6302, rcosterg@wisc.edu; Ph.D., Minnesota, 1976, Professor - Historical, cultural, Europe, and North America.

JAMIE A. PECK, 243 Science Hall, 262-1453, jpeck@ geography.wisc.edu; Ph.D., University of Manchester, 1988, Professor - Political economy, labor geography, politics of economic development, urban and regional restructuring, employment / welfare policy.

MATTHEW D. TURNER, 340 Science Hall, 262-2465, turner@geography.wisc.edu; Ph.D., U.C.-Berkeley, 1992, Professor - Environmental resources, cultural ecology, Africa.

JACK WILLIAMS, 421 Science Hall, 265-5537, jww@geography.wisc.edu; Ph.D., Brown University, 1999, Assistant Professor - Vegetation dynamics, paleoecology, paleoclimatology.

A-XING ZHU, 421 Science Hall, 262-0272, azhu@wisc.edu; Ph.D., Toronto, 1994, Professor - GIS, remote sensing, and their application in environmental modeling and resource management.

Emeritus Faculty

WALTRAUD BRINKMANN	REID BRYSON
WILLIAM DENEVAN	DANIEL DOEPPERS
PHILLIP MUEHRCKE	YI-FU TUAN
THOMAS VALE	ROBERT SACK

Advisors

See the Geography website or postings around Science Hall for listings of Undergraduate and Graduate Advisors.

Undergraduate Requirements for the Major in Geography

Procedure for Declaration and Completion

1. Select and meet with the adviser for your intended subfield (see the Geography website for current advisers). If you have not identified your subfield, see the Undergrad Affairs Committee Chair.

Sub-fields:

Group I: Earth Systems and Environmental Processes (Physical Geography)
Group II: People-Environment Interaction (People-Environment)
Group III: Human Geography
Group IV: Area Studies and Global Systems (Area Studies)
Group V: Cartography and Geographic Information Systems

2. Complete the College of Letters and Science "Major Declaration" form (from advisor) and bring to 160 Science Hall for processing.

3. Plan a suitable major program with consultation and approval by a faculty advisor. During the final undergraduate semester, have your total program reviewed and certified that it meets the requirements of the major.

4. To qualify for a major in Geography, you must earn a minimum of 30 in geography and meet A through C below:

A. Breadth of Study: At least one course in each

1. Physical Geography (Group I)
2. People-Environment Interaction (Group II)
3. Human Geography (Group III)
4. Area Studies & Global Systems (Group IV)

B. Skills, Techniques, and Methods: Each of the following, or an equivalent approved by the advisor:

1. Geography 170, Map Reading and Interpretation, or Geography 370, Introduction to Cartography.

2. Geography 360, Quantitative Methods in Geographical Analysis (Spring only).

3. Geography 565, Colloquium for Undergraduate Majors (Spring only)

C. Depth and Quality of Study:

1. A minimum of 15 credits at the intermediate level or above. Course levels are indicated under Concentrations or Tracks.

2. A concentration, approved by the advisor, consisting of at least three related intermediate or advanced level courses (including at least one advanced level course). Choose Options A, B, or C in box below.

3. A grade-point average of 2.0 or higher for courses in the major.

Option A. A concentration from one of the Groups I, II, III, or V

Option B. A concentration from one of the Area Clusters below:

North America: 305*, 329*, 340, 341, 342, 344, 345, 431*, 460*, 506*, 507*, 508*, 531*, 536*, 675

Middle & South America: 303*, 348, 531*, 535*, 538*, 548, 675

Europe and former USSR: 349, 353, 371*, 444, 506*, 531*, 549, 553, 675

Africa: 277, 355, 356, 531*, 537*, 538*, 675

Asia: 358, 531*, 538*, 553*, 558, 675

* Denotes courses having substantial regional content; often satisfies Group IV concentration requirement; see instructor. No more than one course identified with * may count toward the Group IV concentration. For the appropriateness of Geog 675 in any given semester, see instructor. With advisor's written consent, one course with an area focus from outside of the Geography Dept. may count toward the concentration. This course will not count for credit in Geography.

Option C. An individual concentration proposed by the student and approved by the adviser.

CONCENTRATIONS OR TRACKS WITHIN THE GEOGRAPHY MAJOR

Course Levels are indicated by:
E=Elementary; I=Intermediate; D=Intermediate/Advanced; A=Advanced
Frequency of course offering in recent years shown here as an indication (not a future certainty):
1 = every semester; 2 = every year; 3 = every other year;
4 = irregularly

Group I. Physical Geography: Earth Systems and Environmental Processes

120 Global Physical Environments (E) 1
121 Atmospheric Environment and Society (E) 2
127 Physical Systems of the Environment (E) 1
320 Geomorphology (I) 4
321 Climatology (I) 2
325 Analysis of the Physical Environment (I) 2
326 Landforms-Topics and Regions, (Fluvial Geomorphology) (I) 2
328 Arid Lands Geomorphology (I) 3
329 Landforms and Landscapes of North America (I) 3
331 Climatic Environments of the Past (I) 2
420 Glacial and Pleistocene Geology (I) 3
421 Applied Surficial Geology (I) 3
524 Advanced Landform Geography (A) 4
525 Soil Geomorphology (A) 3
527 The Quaternary Period (A) 3
528 Past Climates and Climatic Change (A) 4
531 Global Climates (A) 3

Group II. Environmental Studies: People-Environment Interaction

139 Resources and People (E) 2 or 3
230 Soil: Ecosystem and Resource (I) 2 or 3
240 Plants and Man (E) 2 or 3
303 The Human Role in Changing the Face of the Earth (I) 2
309 People, Land and Food: Comparative Study of Agricultural Systems (I) 2
319 Environmental Evaluation and Adaptation (I) 3
336 Our Hazardous Environment (I) 4
338 Vegetation: Stability & Change (I) 4
339 Environmental Conservation (I) 1

434 People, Wildlife and Landscapes (I) 2
460 American Environmental History (I) 3
*508 Landscape and Settlement in the North American Past (A) 3
519 Environment and Human Experience (A) 3
534 History and Ideology of Environmentalism (A) 4
535 Environmental Geography & Conservation in Developing Countries (D) 4
536 American Wilderness: Perception and Preservation (A) 3
537 Culture and Environment (A) 2
538 The Humid Tropics: Ecology, Subsistence, and Development (A) 4

Group III. Human Geography

101 Introduction to Cultural Geography (E) 1
102 Spatial Organization of Human Activity (E) 4
236 Bascom Course: The Power of Place (E) 4
300 Population, Migration, and Diffusion (I) 4
301 Geography of Social Organization (I) 4
302 Economic Geography: Locational Behavior (I) 4
305 Introduction to the City (I) 1
311 Industrial Location: Theory and Patterns (I) 4
312 Regional Development and Planning (I) 1
318 Geography, Politics, and Territoriality (I) 2
*349 Europe (I) 2
*353 Russia and the Newly Independent States: Topical Analysis (I) 2
444 Health and Social Welfare in Society (I) 4
501 Space and Place: A Geography of Experience (A) 3
502 Spatial Behavior (A) 4
503 Researching the City (I) 3
505 Urban Spatial Patterns and Theories (A) 4
506 Historical Geography of European Urbanization (A) 4
*508 Landscape and Settlement in the North American Past (A) 3
510 Economic Geography (A) 2
*553 Russia and the CIS: Problems in Human Geography (A) 4
558 The Social Geography of Asian Cities in Comparative Perspective (A) 2

Group IV. Area Studies and Global Systems

140 World Regions: Concepts and Regions (E) 4
244 Introduction to Southeast Asia: Vietnam to the Philippines (E) 1
253 Russia: An Interdisciplinary Survey (E) 2
260 Latin America: An Introduction (E) 2
277 Africa: An Introductory Survey (I) 1
342 Geography of Wisconsin (I) 4

344 The American West (I) 3
348 Latin America (I) 2
*349 Europe (I) 2
*353 Russia and the Newly Independent States: Topical Analysis (I) 2
355 Africa, South of the Sahara (I) 2
358 China and Southeast Asia (I) 2
548 Problems in the Geography of Latin America (A) 4
*553 Russia and the CIS: Problems in Human Geography (A) 4

Group V. Cartography and Geographic Information Systems

170 Intro to GIScience (E) 1 or 2
351 Elementary Photogrammetry (I) 4
370 Introduction to Cartography (I) 1
377 Introduction to GIS (I) 2
570 Problems in Cartography (A) 4
572 Graphic Design in Cartography (A) 2
574 Cartographic Methods in Research (A) 4
575 Introduction to Computer Cartography (I) 2
576 Map Transformations and Coordinate Systems (A) 3
578 GIS Applications (D) 2
579 GIS and Spatial Analysis (D) 2

Group VI. Methodology

360 Quantitative Methods in Geographical Analysis (I) 2
560 Advanced Quantitative Methods (A) 2
565 Colloquium for Undergraduate Majors (I) 2
566 History of Geographic Thought (A) 3 or 4
601 Field Course in Geography (A)
602 Internship 1

* Course is cross-listed in more than one Group. Students must choose the course grouping in which they want to count the course.

Undergraduate Requirements for the Major in Cartography and Geographic Information Systems

An undergraduate major in cartography requires a minimum of 30 credits in geography. The major must include:

CORE (Required) * offered in Spring only

* Geog 360 (4) Quantitative Methods in Geographical Analysis
Geog 370 (4) *Introduction to Cartography
Geog 377 (4) *Introduction to Geographical Information Systems
Geog 370 and 377 should be taken before cartography electives.
* Geog 565 (3) Colloquium for Undergraduate Majors

ELECTIVES

Three of the following courses:
Geog 570 (3) Problems in Cartography
Geog 572 (4) Graphic Design in Cartography
Geog 575 (4) Animated and Web-based Mapping
Geog 576 (3) Map Transformations and Coordinate Systems
Geog 578 (3) GIS Applications
Geog 579 (3) GIS and Spatial Analysis

TOPICAL BREADTH

One course in each of the following groups:
Physical Geography (Group I)
Human Geography (Group III)
People-Environment Interaction (Group II) **or**
Area Studies & Global Systems (Group IV)

OTHER REQUIRED COURSES

At least 11 credits must come from:
College-level Mathematics (8 credits)
Comp Sci 302: Introduction to Programming (3)
At least 5 credits from the following courses in Civil & Environmental Engineering (CEE):
Remote Sensing: CEE 301, 302, 303, 304, 556
Photogrammetry: CEE 301, 403, 404, 551
Surveying: CEE 251, 450, 452, 454
Land Information Systems: CEE 307, 308, 309

Honors in the Major

The L&S Honors Program encourages participation in advanced courses, independent research, and graduate seminars that provide a sound foundation for the completion of a Senior Honors Thesis.

Honors in the Major requires a separate form, available from the Honors advisor (see website.) Please bring the completed form to 160 Science Hall to be stamped and copied before you take it in person to the L&S Honors Office in 420 South Hall.

To earn a B.A. or B.S. with Honors in the Geography Major, students must complete:

1. the breadth requirements for the major;
2. the skills requirements for the major plus Geog 766 (introduction to research methods) for 1 credit, preferably during the junior year;
3. a minimum of 21 credits at the intermediate and advanced levels;
4. two advanced courses in the area of concentration with at least one of these being a graduate seminar (Geog 766, 681, 682 may not be counted toward this requirement); and
5. Senior Honors Thesis, Geog 681-682, during the senior year.

To earn a B.A. or B.S. with Honors in Cartography and Geographic Information Systems, students must complete:

1. the breadth requirements for the major;
2. the core requirements for the major plus Geog 766 (introduction to research methods) for 1 credit, preferably during the junior year;
3. the electives requirement for the major, with the additional requirement that at least one of the electives must be a graduate seminar; and
4. Senior Honors Thesis, Geog 681-82, during the senior year.

Students are urged to take geography courses for honors credits whenever offered, but there is no required minimum number of honors credits. A cumulative overall GPA of 3.3 or higher is required. Honors candidates must plan their program in consultation with the department honors advisor and must identify a faculty member willing to advise their thesis research.

COURSE DESCRIPTIONS

*** NOTE: The following information <u>may change</u> for this semester after the printing of this catalog. The following information is to present a <u>general idea</u> of the course content and format to aid in selecting courses. See the Web Timetable for the most updated version.**

Breadth: B-Biological Science, H-Humanities, I-Interdivisional–does not satisfy breadth requirement, L-Literature, N-Natural Science, P-Physical Science, S-Social Studies, Z-either Humanities or Social Studies.

Level: E-Elementary, I-Intermediate, D-Intermediate or Advanced, A-Advanced

101 Introduction To Human Geography
Schedule: TR 9:55-10:45, 180 Science Hall
Credits: 3 **Breadth:** S **Level:** E **Comm-B course**
Prereq.: Open to freshmen
Description: This newly redesigned introduction to human geography is structured to acquaint students with the recent global patterns and processes that have come to be known as globalization through the use of a human geographic perspective. To do this, the course systematically explores globalization through the use of a series of human geographic 'lenses', including: cultural geography, population geography, economic geography, urban geography and political geography / geopolitics. Within each of these sub-fields of human geography, the course focuses on the current patterns and processes of global change, the geographic variability of these global patterns and processes, and on the ways in which changes at the global scale are affecting, and in turn are affected by, local and regional events and conditions.
Requirements: Geography 101 is a Communications B course, with an emphasis on learning through written and oral communications. During the semester, you will be required to complete three writing assignments. The first writing assignment will be submitted in final form without the opportunity for revision. You will have the opportunity to revise and resubmit the second and third writing assignments. In addition, there will be a midterm and a final essay examination for this course. Beyond these major writing assignments, you are required to read the assigned material prior to the class for which they are assigned, to attend lectures, and to attend and participate in discussion sections. Your participation in discussion sections will include map quizzes and analyses, a group presentation, a film review, and peer reviews of your classmates' papers.

120 Global Physical Environments Williams, Knox

Schedule: Lec 1: MW 8:50-9:40, 180 Science Hall
Lec 2: MW 11:00-11:50, 180 Science Hall
Credits: 3 **Breadth:** P **Level:** E **Cross-listed:** Envir St
Prereq.: Open to freshmen, not open to those with cr in Geog 127
Description: Global distribution and processes of climate, weather, ecosystems, landforms, and soils, emphasizing interrelationships.
Textbooks: Physical Geography, 7th ed., T.L. McKnight, Prentice Hall
Exams: Three equally weighted exams (Exam 3 is not a comprehensive final).

121 Atmospheric Environment and Society
Schedule: Lec 1: M 7:00-9:00pm
Credits: 2 **Breadth:** P **Level:** E **Cross-listed:** Atm Ocn, Envir St
Prereq.: Open to freshmen
Description: Changing interactions between humans, other animals and plants, and the atmospheric environment, both in time and space.

127 Physical Systems of the Environment
Schedule: Lec 1: TR 11:00-12:15, 180 Science Hall
Credits: 5 **Breadth:** P **Level:** E **Cross-listed:** Envir St
Prereq.: Open to freshmen, not open to those with cr in Geog 120,123,124,125 or ILS132.
Description: Climate, vegetation, soil, water, and landforms as components of environmental systems; interrelationships among the components; spatial patterns of environmental systems over the Earth; changes in the systems through time.

170 Map Reading and Interpretation Burnicki
Schedule: Lec 1: TR 8:00-9:15, 444 Science
Lec 2: TR 1:00-2:15, 180 Science
Credits: 3 **Breadth:** P **Level:** E **Cross-listed:**
Prereq.: Second semester freshman or consent of instructor
Description: (Will have a change of title in 2008-09, to: "Our Digital Globe: An Overview of GIScience and its Technology.") This class explores the geospatial information that surrounds us - maps, images, and location-specific data. The course examines the creation and use of maps and map-related products to answer spatial questions, and provides the tools students need to assess the strengths and limitations of map representations. It investigates the application of geospatial technologies like GPS, Google Earth, satellite imaging, and GIS to improve and enhance our ability to understand and convey spatial information.

230 Soil: Ecosystem & Resource
Schedule: Lec 1: MWF 8:50-9:40
Credits: 3 **Breadth:** P **Level:** I **Cross-listed:** Envir St & Soil Sci
Prereq.: Not open to students with credits in Soil Sci 301
Description: The role of soils in ecosystems (habitat, moisture and nutrient reserve, biologically active part of the groundwater system) and the impact of human activity on the soil environment.

244 Introduction to Southeast Asia: Vietnam to the Philippines
Schedule: Lec 1: TR 9:30-10:45
Credits: 4 **Breadth:** Z **Level:** E **Cross-listed:** Hist, Poli Sci, LCA, Soc
Prereq.: Open to freshmen
Description: Southeast Asian history, religion, folklore and literatures, educational systems, and politics from the early classical states to contemporary social, literary, and political developments.

253 Russia: An Interdisciplinary Survey
Schedule: Lec 1 MWF 1:20-2:10
Credits: 4 **Breadth:** Z **Level:** E **Cross-listed:** Hist, Poli Sci, LCA, Soc
Prereq.: Open to freshmen
Description: Comprehensive interdisciplinary survey of Russian civilization from its beginnings through the present day.

260 Latin America
Schedule: Lec 1 TR 5:30-6:45pm
Credits: 4 **Breadth:** S **Level:** E **Cross-listed:** Afroamer, Anthro, History, Poli Sci, Rur Soc, Soc, Spanish
Prereq.: Not open to freshmen
Description: 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.

277 Africa: An Introductory Survey
Schedule: Lec 1 TR 1:00-2:15
Credits: 4 **Breadth:** Z **Level:** I **Cross-listed:** African, AfroAm, Anthro Hist, Poli Sci, Soc
Prereq.: Open to freshmen
Description: 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.

305 Introduction to the City
Schedule: Lec 1 TR 1:00-2:15, 180 Science Hall
Credits: 4 **Breadth:** S **Level:** I **Cross-listed:** URPL
Prereq.: Sophomore standing; qualified Freshmen admitted with instructor consent
Description: This course is designed to provide a basic understanding of cities. Urban theories and models will be stressed throughout the course. The discussion sections will be devoted to an examination of contemporary urban problems.

318 Geography, Politics and Territoriality Kaiser
Schedule: Lec 1 TR 9:30-10:45, 444 Science Hall
Credits: 3 **Breadth:** S **Level:** I **Cross-listed:**
Prereq.: Sophomore standing
Description: Principles relating political behavior and geographic location and area.

326 Landforms - Topics and Regions: Responses of Rivers and Streams to Environmental Change Knox
Schedule: Lec 1 T 6:30-9:00pm, 180 Science Hall
Credits: 3 **Breadth:** P **Level:** I **Cross-listed:** Geology
Prereq.: Intro phy geog or phy geol crse, or cons inst
Description: Emphasis on natural and human processes that control the morphology of the land and its waterways. Major emphasis on surface water hydrology, erosion, sedimentation, and physical characteristics of streams and rivers.

339 Environmental Conservation Naughton
Schedule: Lec 1: MWF 9:55-10:45, 180 Science Hall
Lec 2: MWF 1:20-2:10, 180 Science Hall
Credits: 4 **Breadth:** S **Level:** I **Cross-listed:** Envir St
Prereq.: Sophomore standing
Description: The first half of the course explores the history of resource exploitation and environmental protection in the U.S., focusing on "environmental conservation" as a multi-pronged, ever-changing social movement. We will explore differing ideas of "nature" and "conservation", as well as contemporary conservation efforts in places like the public lands

in the American West and the oceans. The second half of the course focuses on global issues, with special emphasis on the tropics.
Textbooks: To be announced. Reserved readings available on the web.
Exams: Two exams
Grading: Two exams 200 points, discussion section activities 100 points

344 The American West Mason
Schedule: Lec 1 TR 11:00-12:15, 360 Science Hall
Credits: 3 **Breadth:** S **Level:** I
Prereq.: Not open to Fr.
Description: Region geography of the western United States: Natural landscapes and human land use, environmental change and land use issues.

349 Europe Ostergren
Schedule: Lec 1 MW 2:30-3:45, 180 Science Hall
Credits: 3 **Breadth:** S **Level:** I
Prereq.: Sophomore standing
Description: Survey of European geography with emphasis on European culture, political organization, urbanism and regional landscapes.
Textbooks: To be announced. Reserve readings available on the web.

360 Quantitative Methods in Geographical Analysis Burt
Schedule: TR 2:30-3:45, 180 Science Hall
Credits: 4 **Breadth:** P **Level:** I **Quantitative Reas.-B course**
Prereq.: Sophomore standing
Description: The course is a requirement for a geography degree and introduces students to elementary analytical techniques and concepts. As part of the learning objectives of this course, students will gain a basic understanding and working knowledge of several standard statistical techniques that are used in diverse disciplines including geography. They are not in themselves 'geographical' but are useful analytical tools in applied research in geography. Upon successful completion of the course, students should be familiar with computer software used to summarize data and perform statistical tests, and be able to read and interpret quantitative reports critically.

370 Introduction to Cartography Harrower
Schedule: Lec 1 TR 1:00-2:15, 360 Science Hall
Credits: 4 **Breadth:** P **Level:** I
Prereq.: Sophomore standing or instructor consent

Description: This course serves as a broad introduction to cartography, with a dual emphasis on the theory and practice of making maps. The objective is to help students develop the faculty to think critically about cartographic processes and representations and to develop their skills in creating maps. Topics include the basics in mapping (e.g., scale, spatial reference systems, and projections), data acquisition and organization, key techniques for thematic mapping, and the principles of cartographic abstraction and design. By the end of the course students will understand how maps are made and how to transform geographic data (related to people, places, and things on, in, or under the earth's surface) into abstract, symbolic representations of the world. There are numerous of kinds of maps (e.g., choropleth, isoline, proportional symbol, reference) and many ways to implement those basic maps forms: understanding the advantages and disadvantages of various map forms (and when they can / should be applied) is a central theme of this class. This course contains a significant lab component.

377 Introduction to Geographic Information System Zhu
Schedule: Lec 1 TR 4:00-5:15, 180 Science Hall
Credits: 4 **Breadth:** P **Level:** I
Cross-listed: Envir St 377, meets with CEE 357
Prereq.: Intro course in environmental or mapping science (Geog. 370 may be taken concurrently)
Description: Geographic Information Systems (GIS) deals with the analysis and management of geographic information. This course offers an introduction to methods of managing and processing geographic information. Emphasis will be placed on the nature of geographic information, data models and structures for geographic information, geographic data input, data manipulation and data storage, spatial analytic and modelling techniques, and error analysis. The course is made of two components: lectures and labs. In the lectures, the conceptual elements of the above topics are explained. The labs are designed in such a way that students will gain first-hand experience in data input, data management, data analyses, and result presentation in a geographical information system.

401 Seminar: Environment, Culture, Politics: N. America Harris
Schedule: Lec 1 TR 1:20-2:10, 444 Science Hall
Credits: 3 **Breadth:** S **Level:** A **Cross-listed:** History, Envir St
Prereq.: Appropriate intermediate level course, or cons inst.
Description: This is an interdisciplinary course devoted to understanding environmental processes and politics in North America. It will focus on the social, political, cultural and ecological relations that shape specific urban and rural environments, the social movements that have arisen in response

to environmental changes, and the importance of culture and identity in struggles over resources and environments. The course has several objectives. It will introduce you to the field of 'political ecology' and associated concepts of 'environmental justice.' It will challenge you to develop critical perspectives on environment and society as part of the project of understanding changing environments and environmentalisms. Together, we will engage these perspectives to examine in detail a number of specific environmental conflicts, through readings, activities, and field-based experiences. Case studies will focus on such things as the politics of energy in Minnesota, Native American fishing and whaling rights, nuclear testing and waste disposal, environmental issues on the US-Mexico border, risks to worker health and welfare in industry, and the politics of 'wilderness' in the American West. As should be clear by this list, the course will challenge conventional definitions of 'environment', in order to understand where we work and live as sites that need to be carefully analyzed. In turn, we will focus on the spatial relations of environmental problems, for example, tracing the ecological and social relations of production and consumption that link together distant communities (i.e. energy consumers in Minnesota and First Nations in northern Manitoba). As such, an objective of the course will be to understand the ways that disparate places, people and environments are inter-connected in contemporary eras of globalization, and thus to consider what it might mean to live as 'global citizens' in terms of environmental and social justice considerations. Students in this course will have the option of participating in a service learning project for an additional 2 credits. As part of this option, approximately forty hours of work with a local organization will be required, in addition to reflection sections to attempt to link the service learning experience to course themes.

420 Glacial and Pleistocene Geology
Schedule: TR 11:00-12:15, 140 Weeks
Credits: 3 **Breadth:** P **Level:** A **Cross-listed:**
Prereq.: Geol 100, 101, 106 or Geog 120
Description: Principles, characteristics and work of glaciers; events of the Pleistocene. Field trip.

501 Space and Place: A Geography of Experience Kaiser
Schedule: R, 1:20-3:50, 350 Science Hall
Credits: 3 **Breadth:** S **Level:** A **Cross-listed:**
Prereq.: Junior standing
Description: 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.

503 Researching the City: Qualitative Strategies Peck
Schedule: Lec 1 T 1:20-3:50, 350 Science Hall
Credits: 3 **Breadth:** S **Level:** I **Cross-listed:** Urb R Pl
Prereq.: Junior st.
Description: 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.

523 Quaternary Vegetation Dynamics Williams
Schedule: Lec 1 MW 4:00-5:15, 450 & 380 Science Hall
Credits: 3 **Breadth:** B **Level:** A **Cross-listed:** Geology
Prereq.: Jr st & Geog 120 / 127 or equiv.
Description: 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.

527 The Quaternary Period Mason
Schedule: Lec 1 R 3:30-6:00, 360 Science
Credits: 3 **Breadth:** P **Level:** A **Cross-listed:**
Prereq.: 1 intermed-level crse in physical geog or geol; or cons inst.
Description: Landscape evolution over the past two-three million years, emphasizing the effects of climate change on processes shaping the landscape in unglaciated regions: Sea-level change and coastal evolution, hillslope erosion, river systems, desert dunefields, loess, and pluvial lakes.

565 Colloquium for Undergraduate Majors Ostergren
Schedule: Lec 1 T 4:00-6:00, 350 Science Hall
Credits: 3 **Breadth:** **Level:** I
Prereq.: Geography majors or with consent of instructor
Description: This course is designed to provide geography majors with: (1) An overview of the field of geography and an appreciation of the unique features of the "geographical approach" through a synthesis of major theoretical debates within geography; and (2) Experience in doing performing applied geographical research in a cooperative group situation. In the process, participants will gain a fuller understanding of how their subfield in geography (physical, people-environment, human, cartography,

regional etc.) relates to other subfields historically, conceptually, and methodologically.

575 Animated and Web-based Mapping Harrower
Schedule: Lec 1 MW 2:30-3:45, 360 Science Hall
Credits: 4 **Breadth:** P **Level:** I **Cross-listed:**
Prereq.: Geography 370 / 375 or Comp Sci 302 or consent of instructor
Description: The digital revolution has changed how we make maps, how we use them, and how we think about them. The rapid and concurrent developments in desktop computing capabilities, the availability of digital geospatial data, and the growth of the Internet have radically changed the cartographic landscape. In an age where the user has increasingly become their own mapmaker (e.g., GoogleMaps, online GIS) this course examines recent issues in cartography related to map animation, the Internet, geovisualization, and on-demand cartographic systems--focusing on the new cartographic challenges and opportunities associated with interactive, digital mapping systems. This class will examine both theoretical and practical issues in the design of effective digital maps and mapping systems. Topics include: the representation of change, exploratory data analysis, and tools and techniques in geovisualization. This course contains a significant lab component.

578 GIS Applications Zhu
Schedule: Lec 1 TR, 11:00-12:15, 444 Science Hall
Credits: 4 **Breadth:** P **Level:** A **Cross-listed:**
Prereq.: Geography 377 or equiv
Description: This course focuses on the uses and applications of GIS techniques in solving practical geographic problems. It introduces a generic process for applying GIS techniques in geographic problem solving. The process includes conceptualization of a geographic problem and development of strategies for solving the problem in a GIS environment. The conceptualization focuses on decomposing a given geographic problem into smaller but interconnected components. The development of strategies looks into specific GIS techniques for solving each of the smaller components so that the overall question can be addressed using GIS. The emphasis is not on the specifics of particular GIS techniques rather on the selection and use of various GIS techniques based on the domain knowledge dictating the problem at hand. The process is further illustrated via the analyses of several case studies of GIS applications in geography. These case studies range from human to physical geography. The course is divided into three basic components: introduction of the generic process of GIS application, case studies illustrating this process, and student projects using this process. Students are encouraged to select the disciplinary domains for their

projects. The objectives are: 1) To provide students with a generic process of solving geographic problems using GIS and to develop student's skills in conceptualizing geographic problems and in developing GIS strategies to solve the problems; 2) To provide students with practical experience on managing GIS projects.

602 Internship
Credits: 1-2 **Level:** A
Prereq.: Undergraduate majors or graduate students in Geography and instructor consent
Description: Students may earn credit for internships (service experience with government agencies, nonprofit organizations) that enrich the student's academic education. On credit per 45 hours of internship service (generally 1 credit per semester or up to 2 during the summer). Not more than 2 internship credits to be counted toward the 30-40 credits in Geography.

676 Topic: Geocomputing Burt
Schedule: Lec 1 TR 8:50-9:40, 360 Science Hall
Credits: 3 **Breadth:** P **Level:** A **Cross-listed:**
Prereq.: Must take Geog 377 concurrently; Junior, senior, or grad standing
Description: This intermediate-level course will eventually be taught as Geog 375, Introduction to Geocomputing. This is intended to be an introduction to scripting and programming for GIS and spatial analysis. For the purposes of the Cart / GIS major, Geog 676 (and ultimately 375) will be accepted as meeting the programming requirement (CS 302). No programming background is assumed. The only pre-requisite is Geog 377, which must be taken concurrently. Geog 676 will cover use of open-source GIS libraries, programming and scripting using the Python language, extensions to ArcGIS using Python, and web mapping services (as time permits). This will be a 3-credit offering consisting of lecture and laboratory components.

GRADUATE LEVEL:

766 Geographical Inquiry and Analysis: Techniques Turner
Schedule: Lec 1 R 4:00-6:30, 378 Science Hall
Credits: 1-3
Prereq.: Graduate student: 3 cr, Undergrad. student: 1 cr or consent of instructor
Description: 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.

901 Seminar in Cultural Geography Ostergren
Schedule: Sem 1 M 6:00-8:00, 378 Science Hall
Credits: 2-3
Prereq.: Graduate student standing, by permission only

970 Seminar in Geographic Information Science
Schedule: Sem 1 TBA
Credits: 1-3
Prereq.: Graduate student standing
Topic: Biodiversity in China

980 Earth Science Seminar
Schedule: F 12:05-1:30, 450 Science Hall
Credits: 1
Prereq.: Graduate student:
Topic:

990 Research and Thesis
Credits: 1-9
Prereq.: Consent of instructor
999 Independent Work
Credits: 1-3
Prereq.: Consent of instructor

DATES - SPRING 2007-08

January 14-18 (M-F) Advising & Orientation Week
January 22 (T) Instruction begins
March 15-23 Spring Recess
May 9 (F) Last class day
May 11 (N) Exams begin
May 16-18 (F-N) Commencement weekend
May 17 (S) Exams end

Key: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

AAG Annual Conference: April 15-19 in Boston, MA

DEPARTMENT OFFICES, PHONE, HOURS OPEN

Geography Office
160 Science Hall 262-2138
M-F 7:45-11:30, 12:30-4:30

Geography Computer Lab
380 Science Hall 262-8111

Cartography Lab
M376 Science Hall 262-1363

Geomorphology Lab
217 Science Hall 265-8723

Geography Library
280 Science Hall 262-1706
M-R 9am-9pm, F 9am-4:30,
Sat. Closed, Sun. 3-9pm

Arthur H. Robinson Map Library
310 Science Hall 262-1471

Visit our web site at: http://www.geography.wisc.edu

Geography Club: Watch for announcements of activities posted around Science Hall. Regular meetings are held in Science Hall and locations nearby. See the Geography Website for contact information.

Notes: