

## **Geography and Planning**

Students majoring in geography are required to complete a minimum of 36 hours.

### **GEOGRAPHY CORE**

All students must complete four core courses (12 credits):

GPY 100: Physical Geography- (3 credits) Offered every semester

GPY 220: Cultural Geography- (3 credits) Offered every semester

GPY 400: Geographic Inquiry- (3 credits) Offered in winter semester

GPY 495: SWS Senior Thesis- (3 credits) Offered in fall semester

### **COGNATE REQUIREMENT**

Students may earn either a B.A. or B.S. degree.

-The B.A. degree requires third semester proficiency in a foreign language.

-The B.S. degree requirement is comprised of three courses: STA 215, GPY 300, and either GPY 407, 410, 412, 470, or PA 439 depending on the students desired area of focus.

### **MAJOR ELECTIVES:**

The remainder of the requirements (24 credit hours) is comprised of electives that students select in close consultation with their academic advisor.

-A minimum of 15 credit hours offered through the Department of Geography and Planning

-The remaining 9 credit hours may be selected from relevant courses from other departments listed under "Courses of Instruction" below.

### **City and Regional Planning**

GPY 309 Introduction to City and Regional Planning. Three credits. Offered fall semester

GPY 310 Land Use Planning. Prerequisite: GPY 309. Three credits. Offered winter semester

GPY 364 GIS for Economic & Business Geography. Three credits. Offered fall semester

GPY 385 Economic Geography of the United States. Three credits. Offered fall semester.

GPY 410 Landscape Analysis. Three credits. Offered fall semester.

SS 324 Urbanization Three credits. Offered winter semester

*Cognate courses offered by other departments:* SOC351 Urban Sociology. 3 credits; PA307 Local Politics and Administration, 3 credits; PA439 Community Analysis, 3 credits; ECO345 Environmental and Resource Economics, 3 credits; ECO435 Urban Economics, 3 credits; ECO 436 Real Estate Economics, 3 credits.

## **Environmental Geography**

GPY 361 Historical Geography of the Amazon. Three credits. Offered fall semester.

GPY 362 Geography of World Agriculture. Three credits. Offered fall semester

GPY 410 Landscape Analysis. Three credits. Offered fall semester

GPY 412 Global Environmental Change. Prerequisites: GPY 100 or BIO 105. Three credits. Offered winter semester.

***Cognate courses offered by other departments:*** ECO 345 Environmental and Resource Economics, 3 credits; GEO112 Earth History, 5 credits; GEO 320 Geomorphology, 4 credits; NRM 240 Principles of Climatology, 4 credits.

## **Geographic Techniques**

**GPY 200 Computer Cartography.** Cartography is a major tool that geographers and others use to represent the world. This hands-on course provides an introduction to the art and science of cartography and computers. Students will acquire skills in up-to-date computer cartography and computer graphics design. Three credits. Offered fall and winter semester.

**GPY 307 Introduction to Computer Mapping/Geographic Information Systems.** Basic hands on approach to computer mapping and geographic information systems Class work focuses on natural and social science examples of mapping and geographic information systems. Prerequisite: Sophomore standing or permission of instructor. Three credits. Offered fall and winter semester.

**GPY 364 GIS for Economic & Business Geography.** Explores the use of Geographic Information Systems (GIS) technology in business decision making, including market area analysis, geodemographic segmentation, site selection, routing, customer profiling, sales territory management, and location strategies. Emphasis on hands-on activities. Problem-based learning approach. Three credits. Offered fall semester.

### **GPY 385 Economic Geography of the United States**

Analyzes the location of economic activity, changes in the location of economic activity, and the implications of changing economic location patterns for national, regional and local economic development in the United States. Emphasis on the empirical study of the U.S. economy using GIS and spatial analysis techniques. Three credits. Offered fall semester. Applies to Theme 17: Cities.

**GPY 370 Introduction to Remote Sensing.** This course provides an introduction to the fundamentals of remote sensing and digital image processing technology. Topics include the remote sensing process, physical principles of remote sensing, major remote sensing systems, remote sensing data formats, image processing, and remote sensing applications in geography and other social sciences. Three credits Offered fall semester.

**GPY 425 Field Research Project.** Practical and applied geography carried out as a field research project. Emphasizes methods and techniques useful for professional geographers with application of interdisciplinary knowledge in an intercultural environment. Research skills built through field research in topics of special interest. Three credits. Offered for specific field research. If you are interested please contact the Chair of the department.

**GPY 407 Advanced Geographic Information Systems.** An advanced level GIS course emphasizing decision analysis through applications of spatial statistics and geospatial modeling. Topics include multivariate statistics, error assessment and propagation, fuzzy logic, uncertainty and decision risk in GIS modeling, as well, location analysis, network analysis, intervisibility analysis, and terrain modeling using industry standard GIS software. Prerequisite: GPY 307. Four credits. Offered winter semester.

**GPY 470 Digital Image Processing.** Provides theory and applications of digital image processing techniques. Focuses on the methodologies of thematic extraction of environmental information using computer based image processing systems and interface between GIS and remote sensing. Topics include image enhancement, multi-spectral classification algorithms, and model development. Prerequisite: GPY 370 or NRM 250 or permission of instructor. Three credits. Offered every other winter semester.

*Cognate courses offered by other departments:* CS 160 Programming in Visual Basic, 3 credits; CS 162 Computer Science I, 4 credits; CS 230 Hardware and Software, 3 credits; CS 260 Application Development in Visual Basic, 3 credits; NRM 250 Resource Managements and Maps, 4 credits; NRM 350 Aerial Photography and Remote Sensing of the Environment, 4 credits; NRM 395 GIS Applications in Resource Management, 3 credits.

### **Regional/Global Studies**

**GPY 235 World Regional Geography.** A survey of geography followed by an examination of specific geographic concepts. Physical, cultural, economic, and related factors will be given more emphasis than place-name geography. Three credits. Offered every semester. Fulfills Social Sciences Foundation and World Perspectives requirements.

**GPY 335 Geographic Patterns-Global Development.** Development involves positive and negative social, political, economic, cultural, and environmental changes for people living in a region or a country. GPY 335 explores the complex geography of the processes associated with development and in particular global development. Three credits. Offered winter semester. Applies to Theme 15: Global Change: Integration and Fragmentation.

**GPY 345 Geography of Michigan/Great Lakes Region.** A study of the physical and cultural features of the Great Lakes region with emphasis on Michigan. Lecture and discussion. Three credits. Offered fall semester.

**GPY 350 Geography of Russia and Eurasian Republics.** This course introduces trends in physical, cultural, economic and environmental geography of Russia and fourteen Eurasian republics of the former Soviet Union, an enormous and extremely diverse geographic region.

Topics include natural environments, ethnic and linguistic patterns, social and economic development, environmental issues, and recent political trends in post-Soviet societies. Cross listed with RST 350. Three credits. Offered winter semester. Fulfills World Perspectives requirement. Applies to Theme 15: Global Change: Integration and Fragmentation.

**GPY 351 Geography of Africa.** Africa is one of the most fascinating world regions yet paradoxically one of the least known. The focus of this course is on the rich cultural (language, religion, agriculture, cities, health, economy) and physical (climate, vegetation, landforms) geographies of this vast region and how they have changed over time. Three credits. Offered winter semester. Fulfills World Perspectives requirement.

**GPY 352 Geography of Latin America.** The growth and development of Latin America has a significant impact on most activities in North America. Examines those effects and studies the cultural and physical development of Latin America. Three credits. Offered fall semester.

**GPY 353 Geography of Canada and the United States.** A study of the physical and cultural development north of the Rio Grande. Followed by a spatial analysis of the area's population, resources, and economy. Three credits. Offered winter semester.

**GPY 354 Geography of Asia.** Introduction to the physical and cultural geography of Asia: The Indian subcontinent, China, the Koreas, Japan, Taiwan, and Southeast Asia. Three credits. Offered fall semester.

**GPY 355 Geography of Southwest Asia (The Middle East).** Introduction to physical and cultural geography of Southwest Asia and North Africa. Three credits. Offered fall semester. Fulfills World Perspectives requirement.

**GPY 356 Geography of Europe.** The world has been strongly influenced by European geographic principles and practices. Course will focus on the physical and cultural geographic development of Europe, including a spatial analysis of the area's population, resources, and economy. Three credits. Offered winter semester. Applies to Theme 11: Earth and Environment.

*Cognate courses offered by other departments:* ANT 215 Origins of Civilization, 3 credits.

## **Other**

**GPY 380 Special Topics in Geography.** Provides an interdisciplinary opportunity for students to pursue advanced study in special topics related to geography. Topics vary each term. May be taken more than once when the topic is different. Three credits. Offered on sufficient demand.

**GPY 399 Independent Readings.** Independent supervised readings in selected topics. Prerequisite: Permission of program coordinator. One to three credits. Offered on a credit no credit basis. Offered every semester.

**GPY 490 Internship.** Supervised work experience in an area related to geography. Prerequisite: Permission of Chair of the department. One to nine credits. Offered on a credit/no credit basis. Offered every semester.

**GPY 499 Independent Research.** Research conducted individually with faculty supervision. Attention given to written and oral presentation of research findings. Prerequisite: Permission of the Chair of the department. One to three credits. Offered on a credit/no credit basis. Offered every semester.

Students generally focus their electives beyond the core courses in certain academic areas (for example, Geographic Information Systems, Remote Sensing and Image Processing, Cartography; City and Regional Planning; Environmental Geography/Environmental Studies, or Regional/Global Studies). However, it is suggested that a certain breadth across these areas is advantageous in order to provide flexibility and marketability for employment and/or acceptance by a graduate school. No more than six hours of 399 and 499 combined may count toward the major.