

GEOGRAPHY (GO)

GO-500 Theories and Methods of Geographic Information Systems

Credits: 3

Term Offered: Spring Term

Course Type(s): None

Provides students with a solid foundation in the theories and methods of Geographic Information Systems. Students gain knowledge of important applications as well as the acquisition, accuracy, formatting, management, analysis and manipulation of data. When students complete this course, they are expected to know: what GIS is, what GIS can and cannot do, how data is stored, and how data in GIS is manipulated and analyzed to satisfy a project's goals.

GO-501 Advanced GIS Applications and Project Implementation

Credits: 3

Prerequisite(s): GO-500

Term Offered: Spring Term

Course Type(s): None

Enables students to deepen their understanding of the software, theory, and applications of GIS. Upon completion of the course, students will have developed two projects as part of their portfolio: one in GIS implementation and one in project design and analysis within their particular area of study.

GO-510 Cartography in GIS

Credits: 3

Term Offered: Spring Term

Course Type(s): None

Introduction to the study of cartography within Geographic Information Systems. Topics will include map types, the content and structure of maps, map interpretation, the history of mapping, map propaganda, the use of maps in society, and sources of data. Students will learn to make maps using GIS software.

GO-515 Visual Basic for GIS

Credits: 3

Prerequisite(s): GO-500

Course Type(s): None

Visual Basic is becoming the primary programming tool for developing Windows applications in most GIS environments. Students will learn fundamental programming techniques and advanced methodologies, including component programming and object-oriented data structures. They will have hands-on experience and at the end of the semester will be able to customize and expand GIS functions for different GIS applications.

GO-520 Spatial Database Design and Management in GIS

Credits: 3

Co-requisite(s): AN-524 or GO-524

Term Offered: All Terms

Course Type(s): None

Spatial databases make up the foundation for Geographic Information Systems. This course focuses on proper design, implementation, and management of spatial databases. Students will consider both logical and physical design. Students will get the theoretical training as well as hands-on experience.

GO-524 Introduction to Geographical Information Systems (GIS)

Credits: 3

Term Offered: All Terms

Course Type(s): None

Provides both the theoretical and methodological background for proficient use of Geographical Information Systems (GIS). A multidisciplinary integration of theories and applications pertinent to both natural and social science research. Lectures and discussions will introduce the conceptual and methodological platform that is necessary to design, implement, and interpret GIS research. Weekly lab exercises will develop problem-solving skills and emphasize common research techniques in GIS. Students will also learn field techniques of spatial data collection. In sum, demonstrates how both GIS tools and a geographic perspective may be applied to a broad range of social and ecological research problems. Also listed as AN-524.

GO-530 Advanced Techniques and Technology in GIS

Credits: 3

Prerequisite(s): GO-500

Course Type(s): None

Covers current topics within the field of Geographic Information Systems. The topics will change each semester depending on the changes within the discipline and the needs of students. Such areas of study will include ArcInfo, Geomedia, Avenue Programming, Visual Basic for GIS, and Arcview extensions.

GO-537 Fundamentals of Remote Sensing

Credits: 3

Term Offered: Fall Term

Course Type(s): None

Students learn the fundamentals of remote sensing technologies and of their application to environmental mapping and analysis. This course introduces concepts of light radiation behavior and detection, satellite and airborne imaging systems, image processing and classification, mapping, and map analysis. Students will apply this knowledge through a hands-on term project of their own design.

GO-540 Spatial Analysis

Credits: 3

Prerequisite(s): AN-524 or GO-524

Term Offered: Spring Term

Course Type(s): None

Focuses on methods of spatial analysis and various kinds of modeling within GIS. Included are such topics as 3-D terrain visualization and analysis, locational and network modeling, map algebra, and spatial statistics.

GO-559 Remote Sensing and GPS

Credits: 3

Course Type(s): None

Students will learn the principles of remote sensing, digital image processing, and image analysis. Students will also learn the basic principles of GPS, how to integrate GPS data with other GIS data sets, and how quality can affect problem solving and decision making.

GO-580 GIS and Society

Credits: 3

Course Type(s): None

Examines the political, economic, legal, ethical, and social implications of GIS. Students will learn how GIS influences policy decisions. Topics include societal effects of GIS including issues of privacy, representation, and access to technology.

GO-599 Independent Study in Geography

Credits: 1-3

Term Offered: All Terms

Course Type(s): None

Reading and research under the direction of a member of the Geography faculty. Prior permission of the directing professor and department chair is required to take this course.