

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY

GIS 200 – GEOGRAPHICAL INFORMATION SYSTEMS I (3 CR.)

Course Description

Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 2 hours per week. Laboratory 2 hours per week. Total 4 hours per week.

General Course Purpose

Most people have experience with “Geographic Information Systems” (GIS) or “Geospatial Technology” from the everyday exposure to Global Positioning System (GPS) devices in our cars and our cell phones, satellite images on television news broadcasts, internet services such as MapQuest and GoogleEarth, map graphics in the newspaper, or sophisticated marketing analyses of customer locations presented at business meetings.

This course introduces students to the theory, vocabulary and concepts behind these and other applications of GIS, while providing students the opportunity to develop basic skills to apply GIS in a variety of contexts. An introduction to GIS (Geographic Information System), integrating theory with hands-on manipulation of data (using ESRI’s ArcGIS) to solve real-world problems. Introduces the components of desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making.

The course requires significant time outside of class and scheduled laboratory (8 to 12 hours per week) to complete assignments and master skills. Many students find regular access to a PC with ArcGIS installed essential.

Course Prerequisites/Corequisites

None.

Course Objectives

Upon completing the course, the successful student will:

- Be able to articulate why “spatial is special” (i.e., demonstrate a basic understanding of the inter-relationship of cartography, data base management, data sources and types).
- Apply basic skills to locate or collect, manipulate, and analyze spatial data.
- Characterize GIS trends in the broader context of information technology.
- Create a spatial analysis project, informing a managerial decision (this term project is a synthesis of the theory and skills developed during the course).

Major Topics to be Included

- Scale
- Coordinate systems and projections
- Datums
- Thematic mapping
- Raster and vector data models
- Geodatabases
- Basic spatial analysis
- Geovisualization
- Cartography
- Digitization