Bemidji State University

GEOG 3231: Introduction to Geographic Information Systems

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *.*
Lab Hours/Week: *.*
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course develops a proficiency in basic GIS skills for those new to GIS. Techniques for problem solving and cartographic mapping concepts are also introduced, as they are essential to quality cartographic representation and a marketable skill set. This course concentrates on learning to navigate the current version of ArcGIS software at a beginner's level and one developing and creating maps as communication tools.

B. COURSE EFFECTIVE DATES: 05/14/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Issues of Data Integrity
   Projections and Coordinate systems (the basics)
   Data Models: Vector and Raster Models
   Spatial Analysis
   Vector Overlays
   Boolean Rasters
   Digitizing

2. Basic Map Design
   Best Practices in Cartographic Design
   Demonstrate general knowledge and application of cartographic principles
   Understand the fundamentals of GIS as a system, as software and as a science
   GIS Data & Developing, Using and Incorporating Data
   Understand how to acquire geographical data and utilize it within a GIS
   GPS Data Downloads
   Table and Spatial Joins
   Introduction to and development of Geodatabases
   Shapefiles to feature classes
   Domains
   Project management
   File management
   Project Organization
   Use and Development of Metadata
D. LEARNING OUTCOMES (General)

1. Students will be able to add cartographic elements to a finished map using best practices (following the rules).
2. Students will learn how to acquire geographic data and utilize it within a GIS including digitizing.
3. Students will demonstrate a general knowledge and application of basic cartographic principles; prepare thematic maps that communicate data effectively.
4. Students will understand the fundamentals of GIS, as a system, as software and as science.
5. Students will demonstrate an understanding of GIS operation at a beginner’s level as well as learn some intermediate level skills such as overlays, joins, and geodatabase management.
6. Students will be able to import and display geographic data both raster and vector models.
7. Students will be able to determine basic information about imported data (projections and metadata).
8. Students will be able to prepare both simple and complex (bivariate) thematic maps.
9. Students will be able to add cartographic elements to a finished map using best practices (following the rules).
10. Students will build a GIS vocabulary and use it effectively in future GIS courses and elsewhere.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted