Bemidji State University

GEOG 3231: Introduction to Geographic Information Systems

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course develops a proficiency in basic GIS skills for those new to GIS. The premise of the course revolves around analytical problem solving using spatial data and techniques. The course also focuses on graphic communication of quantitative data including cartographic mapping concepts and data classification. This course concentrates on learning to navigate the current version of ArcGIS software at a beginner's level and developing and creating maps as communication tools. [Core Curriculum Goal Area 4.]

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

C. OUTLINE OF MAJOR CONTENT AREAS

1. History, contemporary practices, and applications of GIS
2. Coordinate systems
3. Vector and raster data formats
4. Numeric data organization and classification
5. Analytical/logical problem-solving approaches and methods
6. Map algebra and raster calculation for suitability modeling
7. Image interpretation and data creation
8. Basic map design for effective cartographic communication

D. LEARNING OUTCOMES (General)

1. discuss the history and contemporary practices and applications of Geographic Information Systems.
2. apply and manipulate Coordinate Systems and coordinate geometry.
3. categorize and organize numeric data using standard classification schemes.
4. develop basic modeling processes in a GIS framework.
5. effectively analyze and communicate the findings of geospatial analysis using graphical tools such as graphs and maps and other cartographic methods.
6. independently develop analytical problem-solving strategies in a GIS framework.
7. create and analyze both raster and vector data models.
8. use map algebra and vector analysis as analytic frameworks to solve problems in a GIS.
E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   Goal 04 - Mathematical/Logical Reasoning
   1. Illustrate historical and contemporary applications of mathematical/logical systems.
   2. Clearly express mathematical/logical ideas in writing.
   3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted