

# Bemidji State University

## GEOG 3232: Intermediate Geographic Information Systems

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

An intermediate course on the theories and application of GIS for spatial data management and analysis, thematic mapping, environmental modeling. This course expands on the concepts and methods presented in Introduction to GIS and guides students through a more comprehensive overview of principles and techniques used in GIS. Course objectives include (1) enhance and build knowledge of GIS as a system and science, (2) improve skills at GIS analysis, and (3) develop and improve problem solving skills.

Prerequisite: GEOG 3231 or consent of instructor.

### B. COURSE EFFECTIVE DATES: 08/25/2014 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Reintroduce Structural Query Language, Geodatabases and attribute data management
2. Develop geographic representations using both raster and vector data
3. Spatial Data Input and Editing (aka digitizing)
4. Vector and Raster Data Models: spatial data analysis
5. Geometric Transformation and Georeferencing
6. GPS Use and Data Collection
7. If time permits, explore the use of Network Analyst, introduce TIN and DEMs, Geocoding and Dynamic Segregation, and introduce GIS modeling and 3D analysis.

### D. LEARNING OUTCOMES (General)

1. The student will continue to enhance his/her understanding of the GIS System and Science through weekly assignments.
2. Improve proficiency using advanced GIS spatial analysis.
3. Improve skills in problem solving.
4. Be able to capitalize on a well-established understanding of cartographic principles to prepare quality geographic representation.
5. Continue to develop quality and transportable collaborative project management skills through the use of geodatabases.
6. Develop a GIS vocabulary and be able to apply and use it effectively in a professional environment or future GIS courses.

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

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted