Minnesota State University Moorhead

GEOS 407: Spatial Analysis

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:
This course requires both of these prerequisites
GEOS 205 - Thinking Spatially
GEOS 307 - Introduction to GIS

Corequisites: None

MnTC Goals: None

Students will use advanced GIS techniques to spatially adjust, extend, modify, integrate, analyze, visualize, and correlate digital spatial data (both rasters and vectors) across space and time using ESRI's ArcGIS extensions (especially 3D Analyst and Spatial Analyst) and customized toolboxes in ArcGIS. This course builds on concepts introduced in the Thinking Spatially (GEOS 207) and Introduction to GIS (GEOS 405) courses and applies them to physical and social data in a GIS.

B. COURSE EFFECTIVE DATES: 02/27/2014 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Apply a minimum of 15-20 customized spatial analyses in ArcGIS.
2. Digitally graph spatial correlations between different physical and social data across time in ArcGIS and Excel.
3. Digitize and manipulate 2D representations of 3D features from the real world in the ArcGIS computing environment.
4. Make defensible inferences about causation based off spatial correlations observed in a GIS and Excel graphs.
5. Solve basic to advanced physical and social problems using digital spatial analysis skills.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted