

Master Syllabus

GEO 2210 - Advanced Spatial Analysis

Division: Liberal Arts, Communication and Social Sciences

Department: Geography

Credit Hour Total: 4.0

Lecture Hrs: 3.0 **Lab Hrs:** 2.0

Prerequisite(s): GEO 1107

Date Revised: January 2017

Course Description:

This course will focus on GIS extensions to apply more complex functions and tools of ArcGIS. Students will learn how to utilize ArcGIS Network Analyst and Spatial Analyst tools to create, query and analyze data sets. Students will also learn to use GPS technology to collect data, build databases and prepare data for analysis using more advanced geodatabase tools. Three classroom, two lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Computer Literacy Competency
- Information Literacy Competency

Course Outcomes:

Data Preparation

Prepare data for use in analysis.

Assessment Method: Portfolios

Performance Criteria:

Students must achieve 70% or higher on the data preparation criteria for the project

Spatial Problem Solving

Determine an appropriate approach to solving a spatial problem or answering a question using geospatial tools and methods.

Assessment Method: Portfolios

Performance Criteria:

Students must achieve 70% or higher on spatial solving problem criteria for the project

Geoprocessing

Run geoprocessing tools individually and implement a model to run several tools in sequence.

Assessment Method: Portfolios

Performance Criteria:

Students must achieve 70% or higher on the geoprocessing criteria for the project

Spatial Analysis

Organize the data sets resulting from analysis.

Assessment Method: Portfolios

Performance Criteria:

Students must achieve 70% or higher on the spatial analysis criteria for the project

Reporting Results

Present the results of a geospatial analysis using appropriate terminology and visualizations.

Assessment Method: Portfolios

Performance Criteria:

Students must achieve 70% or higher on reporting results criteria for the project.

Outline:

Utilization of Network & Spatial Analyst tools

Measure & analyze geographic distribution

Utilization of GPS device and Arc MAP

GPS support

Build databases

Prepare data for analysis using more advanced geodatabase tools

Capstone project