

## 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