



South Central College

GIS 2840 Introduction to Geographic Information Systems (GIS)

Course Outcome Summary

Course Information

Description	This course covers the theory and use of computer software for the collection, analysis, and communication of geographic information. This course will use ArcGIS software, which was developed by Environmental Systems Research Institute, Inc. (ESRI) as a tool to create, manage and manipulate spatial data within a GIS. (Prerequisite: None)
Total Credits	4
Total Hours	96

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32
Lab	2/64

Pre/Corequisites

None

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Explore ArcGIS

Learning Objectives

- Describe GIS data concepts
- Describe the structure of ArcGIS desktop software
- Find and connect to spatial data
- Search for spatial data and maps

2. Manipulate ArcMap

Learning Objectives

Preview maps in ArcMap
Insert layers in maps
Add features from a database
Modify the way features are drawn
Add labels to a map

3. Examine ArcCatalog

Learning Objectives

Describe GIS data management
Find and connect to data
Document database with metadata
Create GIS project and data shortcuts

4. Evaluate Spatial Data

Learning Objectives

Investigate spatial data integrity
Investigate attribute data integrity
Manage raster datasets in a geodatabase
Add specialized datasets to a geodatabase

5. Create Geodatabases

Learning Objectives

Create and modify features
Utilize projected and geographic coordinate systems
Add and edit attribute data, annotation, and dimensions
Check data for errors

6. Create Features

Learning Objectives

Add data to a map
Organize layers
Set spatial extents and scale
Identify and locate features
Use attributes to symbolize features
Create custom symbols

7. Modify Features

Learning Objectives

Utilize the editor toolbar
Clip features
Merge features
Enhance features
Correct Geometric feature deficiencies

8. Review Cartographic Techniques

Learning Objectives

Utilize standard cartographic practices
Compare map scale to reference scale
Use a variety of colors during map development
Utilize standard cartographic symbology

9. Create Reports, Graphs and Maps

Learning Objectives

Create customized graphs
Create customizable reports using Crystal Reports
Create perspective views
Insert Graphs and Reports into map layouts

10. Join and Relate Tables

Learning Objectives

Join MS Access data to feature class data
Join MS Excel tables to feature class data
Add fields and calculate attribute values
Relate attribute tables to feature class data

11. Select Features by Location

Learning Objectives

Select subset features by attribute value
Select features based on location
Select features by multivariable queries
Select features based on other features

12. Examine Methods to Analyze Spatial Data

Learning Objectives

Create paths and corridors
Allocate areas to centers
Model flow
Prepare raster surfaces
Prepare TIN surfaces

13. Prepare Data for Analysis

Learning Objectives

List data preparation tasks
Extract a portion of a dataset
Overlay geographic datasets
Use standard SQL syntax

14. Analyze Spatial Data

Learning Objectives

Measure distances between features
Query spatial data by specific values
Report spatial data relationships
Calculate spatial distances and areas

15. Practice Georeferencing

Learning Objectives

Add raster data to maps
Fit raster to known spatial references
Assign coordinate system to raster data
Rectify raster data

16. Prepare Feature Class Symbolology

Learning Objectives

Manipulate feature class symbolology
Create Custom feature symbolology
Convert feature symbolology to feature class annotation
Reference feature class annotation to map scale

SCC Accessibility Statement

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