

WILLIAM RAINEY HARPER COLLEGE
BUSINESS AND SOCIAL SCIENCE DIVISION
GENERAL COURSE OUTLINE

GEG	152	Geographic Information Systems II	(2 - 2)	3
Course Prefix	Course Number	Course Title	Lec-Lab	Semester Hours

COURSE DESCRIPTION

Continues GEG 151. Emphasizes the practical application of Geographic Information Systems (GIS) technology to solve problems and answer questions. Increases level of proficiency using GIS and performing spatial analysis of data. Introduces GIS operational and management issues.

Prerequisite: GEG 151 with a grade of "C" or better.

TOPICAL OUTLINE

- I. Spatial Analysis
 - A. Data classification methods
 - B. Analyzing density
 - C. Overlay analysis
 - D. Introduction to spatial statistics
 - E. Spatial and temporal change
 - F. Network analysis
 - G. Cluster and hotspot analysis
 - H. Site selection overview
- II. Geoprocessing Automation
 - A. Model Builder
 - B. Overview of GIS scripting options
- III. Project management
 - A. Overview of project management processes
 - B. Defining deliverables
 - C. Reporting project analysis, status and outcomes
 - D. Technical documentation

METHODS OF PRESENTATION

- 1. Lecture
- 2. Computer assisted instruction
- 3. Cooperative learning
- 4. Hands-on lab exercises

STUDENT OUTCOMES: *(The student should...)*

- 1. assess geographic problems and frame geographic questions for inquiry
- 2. prepare and evaluate spatial and non-spatial data for use in analysis.
- 3. determine the appropriate approach to solving a problem or answering a question using spatial analysis methods, such as data classification, overlay analysis, network analysis, spatial statistical methods etc.
- 4. implement a task automation model to run several tools in sequence to complete a GIS task.
- 5. organize the data sets resulting from analysis.
- 6. present the results of a geospatial analysis using appropriate terminology and visualizations.
- 7. understand basic project management processes

METHODS OF EVALUATION

Grades are based on demonstrated proficiency in subject matter. Proficiency is determined from:

1. Completion of laboratory exercises
2. Passing exams
3. Completion of various homework assignments
4. Final project

TEXTBOOK & INSTRUCTIONAL MATERIALS

Required:

Longley et al., Geographic Information Systems and Science, 4th ed., Wiley, 2016

Allen, GIS Tutorial 2: Spatial Analysis Workbook, 10.1 edition, ESRI Press, 20013

Keranen and Kolvoord, Making Spatial Decisions Using ArcGIS Pro: A Workbook, ESRI Press 2017

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