

Crafton Hills College Course Outline

1. **Discipline:** Geography
2. **Department:** Physical Science/ Mathematics
3. **Course Title:** Introduction to Information Mapping
4. **Course I.D:** GEOG 175
5. **Prerequisite(s):** None
Corequisite(s): None
Departmental Recommendation(s): None
6. **Semester Units:** 3
7. **Minimum Semester Hours:**
Lecture: 48 **Lab:** 0 **Clinic:** 0 **Field:** 0

8. **Need for the Course:**

Technology has produced a wide variety of tools that enable investigation and decision making regarding spatial issues to be made in ways not previously available. One unifying idea underlying much of these changes is Geographic Information Systems (GIS). GIS is a tool used to efficiently capture, update, manipulate, analyze, and display many forms of geographically referenced information for investigative and decision making purposes. This course applies to the Associate in Science degree as well as to the certificate requirements in Computer Information Systems. Transfers to CSU.

9. **Goals for the Course:**

GEOG 175 enhances the geography discipline by offering an additional branch of computer training that can be utilized by other disciplines and departments. Training in this area will enable our students to become more employable by having an additional area of expertise. This course is appropriate to the college mission in that it is part of a complete vocational education program leading to employment.

10. **Catalog Description:**

Introduction to GIS using ArcGIS Desktop. Concepts and techniques of information mapping and data visualization. This course is also offered as CIS 175.

11. **Schedule Description:**

Introduction to GIS using ArcGIS Desktop. Concepts and techniques of information mapping and data visualization.

12. **Entrance Skills:**

A. **Requisite Skills:** None

B. **Recommended Skills:** None

13. Course Objectives:

Upon satisfactory completion of the course, students will be able to:

- A. Display qualitative and quantitative data in graphical format using ArcGIS software
- B. Define and describe spatial data types
- C. Perform basic GIS (Geographic Information System) queries to include buffering, joining and selection
- D. Analyze spatial data
- E. Present GIS analysis utilizing proper map design
- F. Discover, hypothesize, text, and display findings using ArcGIS

14. Representative Texts and Instructional Materials:

Ormsby, T., Napoleon, E., Groess, C., Burke, R., and Feaster L. (2004). *Getting to Know ArcGIS desktop*: Redlands, CA: ESRI Press

Korte, G., (2004) *The GIS Book*: Boston, MA: Thomson Press

15. Course Content:

- A. Introduction to GIS
- B. ArcMap
 - 1. Displaying data
 - 2. Navigating a map
- C. ArcCatalog
 - 1. Browsing map data
 - 2. Searching for map data
 - 3. Adding data to ArcMap
- D. Symbolizing features and raster
 - 1. Changing symbology
 - 2. Using styles and creating layers
 - 3. Symbolizing rasters
- E. Querying data
 - 1. Identifying, selecting, finding and hyperlinking features
 - 2. Selecting features by attribute
 - 3. Creating reports
 - 4. Joining tables
 - 5. Relating tables
- F. Selecting features by location
 - 1. Using location queries
 - 2. Combining attribute and location queries
- G. Preparing data for analysis
 - 1. Dissolving features
 - 2. Creating graphs
 - 3. Clipping layers
 - 4. Exporting data
- H. Analyzing spatial data
 - 1. Buffering features
 - 2. Overlaying data

- 3. Calculating attribute values
- I. Projecting data in ArcMap
 - 1. Projecting data on the fly
 - 2. Defining a projection
- J. Building geodatabases
 - 1. Creating a personal geodatabase
 - 2. Creating feature classes
 - 3. Adding fields and domains
 - 4. Drawing features
 - 5. Using feature construction tools
 - 6. Deleting and modifying features
 - 7. Creating an address locator
 - 8. Matching addresses
- K. Making maps from templates
- L. Making maps for presentation
 - 1. Laying out the page
 - 2. Adding a title
 - 3. Adding north arrow, scale bar, and legend
 - 4. Final touches and printing
- M. Creating models
 - 1. Starting a model
 - 2. Building a model
 - 3. Enhancing a model

16. Methods of Instruction:

This course will combine lecture, class discussion, group work, computer-aided presentations, and computer classroom practice.

17. Assignments and Methods of Evaluation:

Hands-on skills practice	20% - 35%
Portfolio	30% - 50%
Quizzes, Exams	5% - 20%
Group Work	5% - 10%

18. Distributed Education Methods of Instruction: None