### GIS 53 Course Outline as of Fall 2016

## **CATALOG INFORMATION**

Dept and Nbr: GIS 53 Title: CARTOGRAPHY IN GIS Full Title: Cartography in Geographic Information Systems (GIS) Last Reviewed: 2/22/2016

Units		Course Hours per Week		Nbr of Weeks	<b>Course Hours Total</b>	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	8	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

### **Catalog Description:**

This course provides training in the knowledge of hard copy and web-based cartographic principles and the skills to implement these principles when creating a map within a Geographic Information Systems (GIS). It assists students in preparation for a career within the field of GIS. It is designed for those students who wish to produce maps which clearly communicate the results of GIS data and analysis.

## **Prerequisites/Corequisites:**

Course Completion of GIS 40

### **Recommended Preparation:**

Course Completion or Concurrent Enrollment in GIS 51

### **Limits on Enrollment:**

### **Schedule of Classes Information:**

Description: This course provides training in the knowledge of hard copy and web-based cartographic principles and the skills to implement these principles when creating a map within a Geographic Information Systems (GIS). It assists students in preparation for a career within the field of GIS. It is designed for those students who wish to produce maps which clearly

communicate the results of GIS data and analysis. (Grade Only) Prerequisites/Corequisites: Course Completion of GIS 40 Recommended: Course Completion or Concurrent Enrollment in GIS 51 Limits on Enrollment: Transfer Credit: CSU; Repeatability: Two Repeats if Grade was D, F, NC, or NP

# **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

AS Degree: CSU GE:	Area Transfer Area	ı		Effective: Effective:	Inactive: Inactive:
<b>IGETC:</b>	Transfer Area	1	Effective:	Inactive:	
CSU Transfer	:Transferable	Effective:	Spring 2009	Inactive:	Fall 2021
UC Transfer:		Effective:		Inactive:	

CID:

**Certificate/Major Applicable:** 

Both Certificate and Major Applicable

# **COURSE CONTENT**

## **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

- 1. Produce, interpret and critique hard copy and web-based maps.
- 2. Create Geographic Information Systems (GIS) maps following standard cartographic principles which can be utilized within a professional portfolio.

## **Objectives:**

Upon completion of this course, the student will be able to:

- 1. Create a hard copy or web-baseed map with clear purpose and objectives.
- 2. Design a map using effective fonts.
- 3. Use proper label placement of text to improve the interpretation of a map.
- 4. Implement proper color mixing using tools provided within a GIS.
- 5. Use color to create a more easily understood map.
- 6. Create custom map symbols for use within GIS.
- 7. Apply notation to facilitate proper interpretation of a map.
- 8. Create graphical representation to allow data to be displayed multiple ways.
- 9. Evaluate and critique maps created by others.

## **Topics and Scope:**

- I. Map design
  - A. Introduction to map design
  - B. Map design for intended audience and viewing media
  - C. Evaluate and critique maps designed by others
  - D. Create a layout
  - E. Export maps, including raster and vector exports to web

- **II.** Type Basics
  - A. The elements of type
  - B. Fonts within Windows OS
  - C. Font families
  - D. Type effects, including callouts, shadows and halos
- III. Type in map design
  - A. Text types in a map
  - B. Label placement
- IV. Color basics
  - A. Color perception
  - B. Color systems
  - C. Mix colors
- V. Color usage within maps
  - A. Color conventions in mapping
  - B. Color schemes
  - C. Color constraints
- VI. Symbolization on the map
  - A. Apply existing symbols to the map
  - B. Create custom point, line, polygon/area and other symbols on the map
- VII. Map elements
  - A. What are map elements
  - B. Apply map elements to overall design
  - C. Create custom elements
- VIII. Cartographic representation
  - A. Define hard-copy and web-based cartographic representations
  - B. The benefits of using representations
  - C. Create hard copy and web-based cartographic representations

## Assignment:

- 1. Textbook reading: Selected chapters plus instructor-prepared materials weekly
- 2. Lab assignments: (8-12)
- 3. Create hard copy and web-based GIS maps: (8-12)
- 4. Midterms: 2
- 5. Final exam

## Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Writing 0 - 0% Lab assignments

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

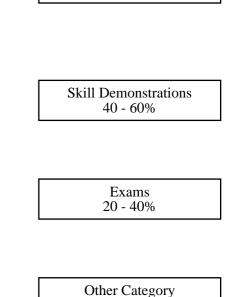
Create hard copy and web-based GIS maps

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, completion, true-false, short answer

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None



0 - 0%

Problem solving

20 - 40%

## **Representative Textbooks and Materials:**

Brewer, Cynthia A., Designing Better Maps: A Guide for GIS Users, 1nd ed., ESRI Press, Redlands, California, 2015

Borden Dent, Jeff Torguson, Thomas Hodler, Cartography: Thematic Map Design, 6th Edition, McGraw-Hill 2008 (classic)

Pinde Fu, Jiulin Sun, Web GIS: Principles and Applications, 1st Edition, ESRI Press, 2010 Instructor-prepared materials