GIS 53 Course Outline as of Fall 2021

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	Course Hours Total	
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:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
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.	Writing 0 - 0%

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

Lab assignments	Problem solving 20 - 40%

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

Create hard copy and web-based GIS maps	Skill Demonstrations 40 - 60%

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

Multiple choice, completion, true-false, short answer	Exams 20 - 40%

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

None	Other Category 0 - 0%

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