GIS 54 Course Outline as of Fall 2009

CATALOG INFORMATION

Dept and Nbr: GIS 54 Title: DATA ACQUISITION IN GIS
Full Title: Data Acquisition in Geographic Information Systems (GIS)
Last Reviewed: 11/14/2022

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	17.5	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:	33 - 3 Enrollments Total
Also Listed As:	
Formerly:	

Catalog Description:
This geographic information systems (GIS) course provides students with the knowledge and practical experience necessary to develop skills in the acquisition, conversion, integration, analysis, management, storage and drafting of geospatial and attribute data.

Prerequisites/Corequisites:
Course Completion of GIS 51 OR Course Completion of APTECH 54B (or CEST399.54)

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: This geographic information systems (GIS) course provides students with the knowledge and practical experience necessary to develop skills in the acquisition, conversion, integration, analysis, management, storage and drafting of geospatial and attribute data. (Grade Only)
Prerequisites/Corequisites: Course Completion of GIS 51 OR Course Completion of APTECH 54B (or CEST399.54)

Recommended:
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: 3 Enrollments Total

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

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

CSU Transfer:	Transferable	Effective:	Spring 2009	Inactive:
UC Transfer:		Effective:		Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, the student will be able to:
1. Identify appropriate sources of geospatial data for GIS
2. Identify appropriate sources of attribute data for GIS
3. Collect data in the field using GPS technology
4. Capture attribute data from public and proprietary sources
5. Hand digitize data from aerial and remote sensing imagery or maps
6. Integrate Computer Aided Drafting (CAD), Raster, Triangular Irregular Network (TIN), Vector and point data in a GIS project
7. Differentiate and prioritize GIS data based on source precision and source accuracy
8. Prepare written, formatted and diagrammatic summaries of various data sources
9. Describe data in narrative fashion for scientific reports and transmission to clients
10. Repeating students will gain enhanced skills and proficiencies through learning and applying methodologies and tools from updated and upgraded versions of the software.

Topics and Scope:

1. Data science and the theory of data
2. Data as discrete numbers vs. data as information
3. Arithmetic and logic
4. Data types, formats and field collection methods
5. Acquisition of existing geospacial and attribute data sets from related GIS sources
6. Acquisition of geospatial and attribute data from remote sensing
7. Analysis, summarization and handling of raw data
8. Conversions and management of data and data files
9. Metadata and data documentation
10. Global positioning systems (GPS)
11. Coordinate systems and datums

12. Mobile mapping and composing field notes
13. Summarize and deliver GIS data
14. With repeat: Updated versions of software - methodologies and tools.

Assignment:

1. Reading assignments averaging 30-50 pages per week. The reading will be assigned each week for the material to be covered in class the following week.
2. Weekly or biweekly lab reports
3. Midterm exam
4. Final exam
5. Repeating students will gain enhanced skills and proficiencies through learning and applying methodologies and tools from updated and upgraded versions of the software.

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 reports	Problem solving 40 - 50%

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

Operate GPS receivers, proper acquisition of data	Skill Demonstrations 30 - 40%

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

Mid-term exam and final exam, including: multiple choice, completion, true-false, short answer, short essay, and/or oral presentation	Exams 20 - 30%

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

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Karen Steede-Terry, Integrating GIS and the Global Positioning System, 1st Edition, ESRI Press, 2000 (Classic)

Jeff Thurston et al., Integrated Geospatial Technologies: A Guide to GPS, GIS, and Data Logging, 1st Edition Wiley Publications, 2003
The Visual Display of Quantitative Information, Tufte, Edward R. Graphics Press, 1983 (Classic)
Envisioning Information, Tufte, Edward R. Graphics Press, 1994 (Classic)