APTECH 54A Course Outline as of Spring 2002

CATALOG INFORMATION

Dept and Nbr: APTECH 54A   Title: INTRO TO GIS
Full Title: Introduction to Geographic Information System (GIS)
Last Reviewed: 9/10/2001

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.50	17.5	Lecture Scheduled	26.25
Minimum	2.00	Lab Scheduled	1.50	17	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.50   Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 33 - 3 Enrollments Total
Also Listed As:
Formerly: APTECH 54

Catalog Description:
An introduction to geographical information systems (GIS), including their use, input, analysis and output of spatial data. Topics include elements of a GIS, data structures and their management, and basic input and output functions and mapping possibilities. Hands-on exposure to computers and the current Arc-View, GIS software package is provided during laboratory.

Prerequisites/Corequisites:

Recommended Preparation:
A working knowledge of the IBM compatible computer system is advised.

Limits on Enrollment:

Schedule of Classes Information:
Description: An introduction to geographical information systems (GIS), including their use, input, analysis and output of spatial data. Topics include elements of a GIS, data structures and their management, and basic input and output functions and mapping possibilities. Hands-on exposure to computers and the current Arc-View, GIS software package is provided during

laboratory. (Grade Only)
Prerequisites/Corequisites:
Recommended: A working knowledge of the IBM compatible computer system is advised.
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:	Fall 1997	Inactive:	Fall 2011
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
The student will:
1. Demonstrate an understanding of how a GIS project is created.
2. Identify the principals and applications of geographical data.
3. Identify the functions and operations of a GIS.
4. Determine the best GIS for specific applications and budget.
5. Plan and design a GIS database.
6. Perform query and analysis functions with a GIS.
7. Integrate GIS with other technologies.
8. Produce a graphical representation of a GIS.
9. Become familiar with the Arc-View GIS Software package and how it
   creates a GIS.

Topics and Scope:

1. Introduction to a GIS and the Arc-View software.
2. Properties of geographical data and data sources.
3. GIS functions and operations. Developing a model.
4. GIS applications, determination of different types of GIS.
5. Planning and designing a GIS.
6. Working with a GIS database: design retrieval, updates. Building a
   database structure and assigning attributes to geographical data.
7. Overview of the query and analysis functions. Performing basic query
   and analysis functions.
8. Integrating GIS with other technologies.
9. Producing output data.

10. Future directions and applications with other disciplines, technologies, etc.

Assignment:

1. Identify the principals & applications in GIS and ArcView software.
2. Identify the properties of geographical data and data sources.
3. Developing a model with themes, overlays and buffers.
4. Determine the best type of GIS, application vs cost.
5. Planning and designing a GIS.
6. Building a database structure and assigning attributes to geographical data.
7. Performing basic query and analysis functions.
8. Overlay GIS data with other imagery.
9. Designing and producing maps.

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 and skill demonstrations 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.

Homework problems, Quizzes, Exams	Problem solving 10 - 20%

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

Class performances, Performance exams	Skill Demonstrations 40 - 60%

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

Multiple choice, True/false, Matching items, Completion	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:
1. Getting to Know ArcView GIS, ESRI Certified, 1999

2. ESRI, Inc., Reference Manuals for ArcView Software. Current available
   edition to be used.