Introduction to ArcGIS 10

GIS applications in public health and health policy

Geography 119A, Fall 2011

Class Time: October 22 and November 5, Saturday 8:00 am- 4:50pm
Location: Butte 501
Office hour: 4:50-5:30 after class in lab
Instructor: Chris Lewis **Contact:** Email Address: cclewis@csuchico.edu

Course Description

GIS provides an effective way to visualize, organize and manage a wide variety of information including administrative, medical, social services, and patient data. GIS is used to identify disease clusters, identify vulnerable populations for disaster planning, to investigate environmental health problems, to understand the spread of communicable and infectious disease and better locate health services to the population served. These are just some of the many applications for GIS.

Esri's ArcGIS software is used by many federal, state and local agencies, as well as educational institutions, private industries and businesses, throughout the world. Many health care executives and public health professionals are now seeing the benefits of managing their organizations through the use of GIS. Managing health care costs by efficiently meeting patient needs with available resources is an activity that is central to every health care organization.

This course provides an overview of ArcGIS version 10 software capabilities and functionality. Because this class focuses on the basics of ArcGIS, it is suitable for those using ArcGIS for just about any application are, not just health related applications. Through lecture, case study discussion and hands-on activities, students will not only begin to learn how to use the software but will also learn the many distinctive advantages of using GIS for public health and policy making and other applications. Data issues, such as where and how to obtain GIS data, projections and scale and privacy will be discussed.

Prerequisites

Familiarity with a "windows" type computer environment is highly recommended. It will a lot more challenging and likely time-consuming for you to learn this sophisticated software product if your only experience is on a MAC.

Student Learning Objectives: After completing this course students will:

- understand what a GIS is
- understand basic GIS concepts
- demonstrate how GIS can be used for health applications and other applications.
- be able to use basic navigation and query tools in ArcGIS 10
- be able to manipulate map layers in ArcGIS 10
- know how to change data from one projection to another
- be able to use ArcGIS's presentation tools to create maps with associated map elements

Required Materials

The Esri "Learning ArcGIS 10" virtual campus course (located at the Esri virtual campus): The instructor will provide you a FREE course code on the first day of class. You do not have to pay for these materials. The exercise portion of the activities for the first Saturday will printed out and provided. You will be responsible for printing out any lecture material that you would like from the site and the hands-on exercises for the second Saturday. Those who want to have the virtual campus exercises printed out for the second class meeting will be responsible to do this on their own. Bring a Travel Drive (thumb drive) that has at least 250MB available.

Assignments

- GIS assignments build upon each other, so it is important to be up to date on your assignments.
- No assignment will be accepted after the due date (and final late date).

- Repetition and Practice (Practice and more Practice) is the only way that you will really learn GIS, so in between classes explore and use the software.

Grading

Esri Virtual Campus Modules 1-4 (all exercises.) & 8 (through ex. 1)
Transcript submittal required for 1-4) 80%
ArcGIS Online (in-class & homework) 10%
Final Exam (50 minutes – timed) 15%
(based approx. 3/4 on module exams &
1/4 class lectures & activities)
Incomplete given for serious and compelling reasons only, at the discretion of the instructor

Saturday 1	**Topic**	**Due**
8:00-8:30	Course Overview/Introductions	
8:30-9:00	Lecture/Demo – Getting Started with ArcGIS	
9:00-10:00	*Module 1, ex.1, ex.2*	
10:00-10:15	BREAK	
10:15-11:15	*Module 1, ex.3, module exam*	Transcript showing score – Due in class
11:15-11:45	Lecture/Demo – Creating Map Symbology	
11:45-12:00	*Module 2, ex.1*	
Noon-1:00	LUNCH	
1:00-1:30	*Module 2, ex.1 (continued)*	
1:30-2:15	*Module 2, ex.2*	
2:15-3:00	*Module 2, ex.3*	
3:00-3:15	BREAK	
3:15-4:15	*"ArcGIS Online" Activity*	Homework: complete. Due beginning of next class
4:15-4:50	*Module 2, ex.4 & module exam*	Homework: Complete unfinished work, read through first part of Module 3 and first ex. 1.

Saturday 2	**Topic**	**Due**
8:00-8:20	Review & Questions	
8:20-8:45	Lecture/Demo – Referencing Data to Real Locations	
8:45-10:00	*Module 3, ex.1, ex.2*	
10:00-10:15	BREAK	
10:15-11:15	*Module 3 (continued) & module exam*	
11:15-11:45	Lecture/Demo – Organizing Geographic Data	
11:45-12:00	*Module 4, ex.1*	
Noon-1:00	LUNCH	
1:00-2:30	*Module 4, ex.1 (continued), ex.2 & module exam*	
2:30-3:00	Lecture/Demo – Final Map Layouts	
3:00-3:15	BREAK	
3:15-3:45	*Module 8, ex. 1*	Late work accepted up to Monday, Nov. 14, 8:00pm – 10% off.
3:45-4:00	*Quick Exam Review*	Due: print final map
4:00-4:50	*FINAL EXAM (mostly multiple choice - open notes) must be taken even if haven't completed Modules & exams. No makeup.*	