GEOG 603 Spring 2007

Introduction to Geographical Information Analysis

Class Hours:	Tuesday & Thursday 12:35 -14:15
Location:	HSS 290 (the Geographic Teaching Lab)
Course Materials:	P:\courses\G603\Spring2007\Section02_Liu

Instructor:	XiaoHang Liu (xhliu@sfsu.edu, note there is an "h")
Office Location:	HSS 269, 415-338-7509
Office hours:	T & TH 12:00 – 12:30 & 14:15-15:15

Text:

Bolstad, P., GIS Fundamentals. 2nd, ed. Atlasworld. (first three chapters downloadable from the website)

Software:

Student license of ArcView 9.1 with 3 extensions is available free for enrolled students.

Course Description:

This course is an introduction to computer-based geographic analysis and problem-solving. Topics progress from computer literacy, through spreadsheet analysis and charting, to specialized geographic information analysis using ArcGIS desktop. The class is designed to be both a survey class to show you what a GIS can do, and a class to give you the basic computer and GIS competencies to implement a project. This understanding of the spatial relationships that can be analyzed in a GIS, and an introduction to the routine use of GIS technology is the foundation for the higher level modeling applications that you can find in further classes (GEOG 611, 620, and 621).

Prerequisites: Prior use of computer and MS Windows, Geog. 103 or equivalent background in geographic research.

Course Goals:

Goal 1: Provide a basic understanding in the theory of modeling, organization, and visualization of geographic information.

Goal 2: Get familiar with ArcGIS desktop. Gain basic knowledge and technical skills to utilize the software.

Goal 3: Show and discuss applications of Geographic Information Systems. Students are encouraged to use the WWW and other resources to research specific applications.

Materials: Students are required to prepare a USB thumb drive for file transfer and backup.

Methods of Instruction: Lecture, demonstration, laboratory, and discussion. For most assignments, student should plan on working one to two extra hours in addition to the assigned lab time.

Grading and Exams: There will be 10 lab exercises, 1 group project, and 2 exams, and 1 take-home exam. All lab exercises, project, and exams are required to pass this class. All labs must be submitted in hard copy by the due date. **No late submission is accepted!**

The course grade will be based on the following allocations: 40% labs, 20% midterm, 20% final, 14% final project, 5% take-home exam, 1% class participation.

Grading will be on a percentage basis: 100-90% A, 89-80% B, 79-70% C, 69-60% D. Plus/minus grades will be assigned for points near the margins.

For each exam, I will provide one week prior notice. Exams will cover the material discussed in class and in the lab exercises. Exams will be collected after we have reviewed them in class. You may have access to them at any time, but you may not photocopy them or take them with you.

Incomplete grade is only assigned if the student has completed 75% of the course work AND provided proof of a strenuous situation.

Remote Sensing Guest Lectures:

Remote sensing is one of the three core geospatial technologies in addition to GIS and GPS. The three technologies are often used in conjunction with each other. A guest lecture series on remote sensing is arranged to provide a quick overview to RS. This is an excellent opportunity. You are strongly encouraged to attend. All lectures start at 1:30pm.

2/1 : EMR spectra and remote sensing;

2/6 : RS instruments and platforms;

2/8: Spectral signatures and classification;

2/13: Applications of RS in physical geography

Schedule:

Week	Dates	Lecture	Lab	Readings
1	1/25	Overview, computer literacy	Lab 1: Computer Literacy, Due 2/1	Reading 1 &2
2	1/30, 2/1	Introduction to GIS	Lab 2: Exploring ArcGIS, Due 2/8 **Remote Sensing Lecture I**	Chapter 1
3	2/6, 2/8	Raster data modeling **Remote Sensing Lecture II**	Lab 3: Raster data modeling **Remote Sensing Lecture III**	
4	2/13, 2/15	Raster data modeling **Remote Sensing Lecture IV**	Lab 3: raster data modeling, Due 2/22	Chapter 2, 11
5	2/20, 2/22	Vector data modeling	Lab 4: Vector data modeling, Due 3/1	Chapter 2
6	2/27, 3/1	Projection and coordinates	Lab 5: projection, Due 3/8	Chapter 3
7	3/6, 3/8	Midterm	Take-Home Exam I, Due 3/27	
8	3/13, 3/15	Database Management System	Lab 6: Attribute Table, Due 3/22	Chapter 8
9	3/20, 3/22	Cartography	Lab7: Cartography, Due 3/29	Chapter 4
10	3/27, 3/29	Data Sources	Lab 8: Geocoding, Due 4/5	Chapter 7
11	4/3, 4/5	Spatial Analysis	Lab 9: Spatial Analysis, Due 4/12	Chapter 9
12	4/10, 4/12	Spring Break, No Class.	Lab 10: Spatial Analysis, Due 4/19	

13	4/17, 4/19	Group Project	Group Project	
14	4/24, 4/26	Group Project	Group project	
15	5/1, 5/3	Group Project	Project Presentation	
16	5/8, 5/10	Project Presentation	Final Exam	
17	5/15	Final Project Due		

Syllabus and schedule are subject to change in the event of extenuating circumstances. Students are responsible to catch up with the announcements and changes. The university policy on plagiarism and disability can be found from SFSU website.