

Principles of GIS

GEOG 478/578
 5 Credits
 Winter Quarter 2006
 M/W 3:10-5pm
 105 Clippinger Labs
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Text Book: *GIS Fundamentals: A First Text on Geographic Information Systems (2nd Ed)*. Paul Bolstad, 2005 Eider Press.

Recommended: *GIS: a Short Introduction*. Nadine Schuurman, 2004 Blackwell.

More information and materials will be available at blackboard and my personal website

This course introduces students into some of the more advanced theoretical ideas and techniques used in geographic information science. The class utilizes a great deal of hands on activities and discussion to better understand some of the current uses and trends within the field of geographic information science. Students will be evaluated on a series of short lab exercises and a final project. Although much of the material focuses on application of geospatial technology, the aim of this course is to move beyond “button pushing” and to develop a critical understanding of the practice of GIS. Although it takes several years to find your comfort zone in any discipline, it is hoped that by the end of this course you will feel comfortable and confident enough with the terminology and application of GIS so that you might be able to apply this practice to your particular areas interests.

Since this course relies heavily on in-class demonstrations and project work, attendance is critical (although not a direct basis for grading). If any topic is unclear after lecture, please do not hesitate to see me as soon as possible. If you are unable to attend any class (e.g., because of an OU-sanctioned activity), please notify me ASAP. You will be held responsible for all material covered in class, and deductions will be imposed for projects turned in late ($\frac{1}{3}$ -letter grade per day). If you do miss class, you should make every effort to contact me before the next class period, so that you can catch up on the missed material. No “extra” credit is available, and **all lab exercises and the final project must be completed to pass the course**. I will post all grades and additional handouts on blackboard so make sure to check the site regularly.

Grade breakdown and due dates:

Project #	Name	Due Date	% of Grade
1	Basic Geodatabase creation	January 18	10
2	Geocoding/Urban site selection	February 8	20
3	GPS	February 15	10
4	3-D rendering and animation	February 22	10
5	Basic Model Building	March 8	20
Final	Individual Project	March 15	30

All assignments are due at the end of class on the specified due date above and should be uploaded to the blackboard site as a pdf file.

Grading Schedule:

Grade	A	B+	B	C+	C	D+	D	F
% Range	100-90	89-88	87-80	79-78	77-70	69-68	67-60	59 or less

Proposed Schedule:

Week	Dates	Topics	Readings
1	Jan 2/4	Course introduction; Computer lab use	B 1-3
2	Jan 9/11	GIS basics review; ARCGIS 9 basics; Geodatabases and geographic information structures; Digital data (Project 1)	B 7,8
3	Jan 16/18	NO CLASS January 16th for Martin Luther King Day; Data acquisition; Geocoding (Project 2)	B 4,6
4	Jan 23/25	Urban site selection (Project 2 cont)	B 9
5	Jan 30/ Feb 1	GPS (Project 3)	B 5,14
6	Feb 6/8	3-D GIS; TINs; Basic Animation (Project 4)	B 11
7	Feb 13/15	Project 4 continued, Modeling in GIS (Project 5)	B 10, 13
8	Feb 20/22	Modeling continued, work on final projects	
9	Feb 27/29	Work on final projects, class presentations	
10	Mar 6/8	Class presentations; NO CLASS March 8th AAG Meeting	B 15
11	Mar 15	Final Exam – Wednesday 12:20-2:00 pm. Hand in final papers for individual projects	

B= Bolstad, S= Schuurman

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Grad Office (102 CLIP): 593-1141

Office Hours MW 11-12

Individual Project:

The individual project will focus on applying GIS to a topic of your choosing. I would highly recommend for graduate students that this be part of your thesis or dissertation project. It will give you a chance to develop some of your data sources and analysis in a classroom environment and get some of the preliminary writing out of the way. For undergraduates, you may want to use this opportunity to supplement a project you are working on in another class by including a GIS component. Even if you are doing a project that is more qualitative in nature, you may be able to use GIS to help build your argument. A handout of the exact format of the project will be made available later in the quarter. In either case, the project should focus on the data collection, methods used, and explaining your analysis of the problem.

Individual Project Deadlines and Information:

Item	Deliverable	Due Date	% of Project
Project Idea	1 Page description of what you want to do and why	Jan 11	10
Project Outline & Flow Chart	Standard outline that maps the flow and expectations for your project.	Jan 25	10
Data Collected	All Geodatabases and raster data need for your project organized in your L: drive + 1 page description of data and its relevance to the project.	Feb 8	10
Analysis Summary	Summary of Results (2-3 pages + maps)	Feb 22	10
Final Report	(10 Page 478) (15 page 578) report + maps	Mar 15	35
Presentation	7 minute PowerPoint presentation on your work	Feb 29, Mar 6	25

Academic Honesty: Academic dishonesty will not be tolerated. Although it is expected that students will help each other while working on the projects, what you turn in should reflect your knowledge, competence, and acquired skills. Anyone who turns in someone else's work as his/her own will receive a zero for the assignment, and may be reported to the Director of University Judiciaries for further action.

Disabilities: If you have a disability that may hinder your performance in the class please inform me at the beginning of the quarter.

Computer and Lab Use: You will need to use the computers outside of the regularly scheduled class time to work on projects and explore the functionality of the software. Dedicated lab times have been established for our class use; I will be present at this time to help answer your questions. You may use the computers at other times during the week except during designated lecture/lab times for other Geography courses (a schedule is posted on the lab door). The lab is not intended for general use, and entrance to the lab is restricted. To enter, punch in the last 6 digits of your PID and then press the * key (the keypad "beeps" with every button pushed). The green light will flash and the door will unlock. Do not leave the door propped open. Please see handout # 1 for additional information about logging on and computer lab use.

IMPORTANT: The computer lab is your resource for the quarter so please abide by its rules and limit your printing to class projects. Below are some basic tips to keeping your data safe and backed up. **Each student should strongly consider purchasing a 512K or larger USB Flash drive.**

1. Copy all your data and do all processing on your local machine. It is much faster and more reliable for data analysis.
2. When working on a local machine put your data in C:\Workspace
3. It might also be smart to back your data up on a flash drive as well
4. In doing the above, **MAKE SURE TO COPY ALL YOUR DATA BACK TO YOUR L: DRIVE** after working in the lab. The machines may be gutted at anytime so any work that is not backed up to the L drive will be lost.