

Geography 321: Introduction to GIS, Fall 2007

Lectures: Lucy Stone Hall, Room B-267 (Tuesday 1:40 – 3:00)

Labs: Lucy Stone Hall, Room B-266 (Thursday 1:40 – 3:00)

The course web site is located on [Rutgers Sakai](#)

General Information

Geographic Information Systems (GIS) is a rapidly growing field that is increasingly popular for a wide range of spatial analyses. Some of the uses for GIS include environmental modeling, urban and landuse planning, facilities management, social and demographic change analyses, economic development, site suitability analyses, and marketing.

This course introduces the fundamental concepts of GIS through lectures and hands-on exercises using two popular software applications (Idrisi and ArcGIS 9). While students will gain a working knowledge of each software application, the focus of the course is on analytical concepts that are foundational to spatial analysis using any GIS software. The software you will use is available on campus in the Department of Geography's computer lab (Room B-266).

The format for the course is a lecture period on Tuesdays and a hands-on lab period on Thursdays. Both periods will be lead by the instructor and attendance is mandatory. In addition, it is expected that you will work in the computer lab outside of class time. There will be regularly scheduled times when the lab is open and when the teaching assistant for this course will be available in the lab.

Course Objective:

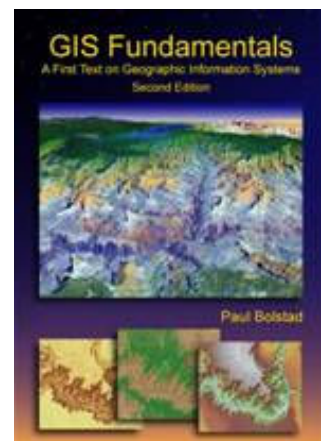
- To present a thorough introduction to GIS, spatial data formats, and the fundamentals and applications of computer-aided spatial analysis.

Course Goals:

- Theoretical understanding of GIS.
- Overview of how GIS is being used.
- Familiarity with various data formats and how to work with them.
- Familiarity with the Idrisi and ArcGIS 9 software packages.
- Ability to use GIS to perform spatial analysis, query data, and derive meaningful information.
- Ability to use GIS for decision making and site suitability analysis.
- Ability to think critically about GIS, its uses and limitations.

The primary text for this course is:

GIS Fundamentals: A First Text on Geographic Information Systems, Second Edition by Paul Bolstad. Eider Press. 2005. This book is available in the Livingston Bookstore. Also, initial chapters of this book are available from the author's website in PDF format (<http://www.paulbolstad.net/gisbook.html>).



Student Assessment

Students of Geography 321 will be assessed using GIS exercises and exams. The exercises are broken into competency exercises, mastery exercises, and one short essay (see below).

12 Competency Exercises found on the course web site (1 point each)	12
7 Master Exercises found on the course web site (5 points each)	35
Short Essay (2-3 pages)	8
Midterm Exam	20
Final Exam	25
Total	100

Grades will be assigned on a fixed scale as follows:

88-100 points	A
75-87	B
62-74	C
50-61	D

Competency Exercises

These are the Idrisi32 tutorial exercises from the *Idrisi Tutorial* as well as three ArcGIS 9 exercises. The *Idrisi Tutorial* is available from the course web site in PDF format. All competency exercises (both Idrisi and ArcGIS 9) are available on the web site. These exercises will teach you the basic concepts of GIS as well as the software tools that you need for the Mastery exercises. Each of the competency exercises are worth 1 point toward your final grade. The total number of points is 12.

Competency exercises are not graded; they are pass/fail only. To get credit for each exercise, however, you will have to turn in a brief assignment to the teaching assistant on or before the due date. Each assignment (such as printing out the final result from an exercise or answering a brief question) will be announced in class and on the course web site.

Mastery Exercises

Mastery exercises are designed to test your ability to use GIS tools for basic analysis and problem solving. They will build upon the concepts covered in class as well as the tools acquired through the competency exercises. Each mastery exercise consists of a data set and a problem to be solved. The steps to solving the problem will not be given but should be developed by each student. There are 7 mastery exercises and they are worth 5 points each.

Using the Computer Lab

The computer lab is located in Lucy Stone Hall, room B-266. Follow this link below for current hours of operation and software available.

http://geography.rutgers.edu/computing/lab_schedule/index.html

There is a \$25 lab fee for this course. The lab fee helps to support the lab, software, and proctors. After paying the lab fee students will be given an account on the department's server. Your account allows you to gain access to the software used in this course, gives you a place to store files, and allows you to print 220 black and white pages and 22 color pages off the lab's printers during the semester.

To pay your lab fee (with a money order or check made out to Rutgers University) and set up a computer account for access to the software see the instructor.

Other Computing Resources

While all the software you will need for this course is available in the Geography computer lab, you are welcome to do the homework exercises wherever you find the software. ArcGIS 9 is available in [Campus Computing Facilities](#) labs and a “Student Starter” version of Idrisi may be purchased directly from [Clark Labs](#) (if you are interested in the Idrisi student version please see the instructor before ordering).

Data Management

Data for all exercises will be served from the course web site and can be downloaded in relatively small sets for each exercise. In addition, data for the in-class labs are also available from the web site. Please arrive to lab sessions a few minutes early in order to set up your computer and download the data for that session.

Contact Information

Instructor: Dr. Kevin St. Martin
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Teaching Assistant: Elizabeth Barron
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Office hours: Tuesdays 12:30 – 1:30 in B-243; Wednesdays 5:00 – 8:00 in B-266 (beginning October 3)