

COURSE SYLLABUS

Urban and Regional Planning 5272- Urban and Regional Information Systems Spring 2007

Course Information

Meets: Friday 9 am to 11:45 am
Where: 208, 035 Bellamy

Contact Information

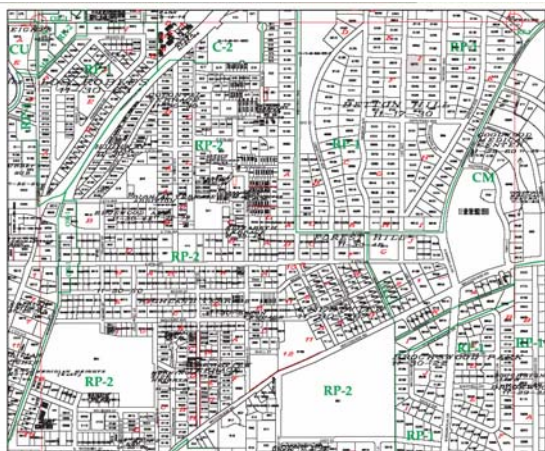
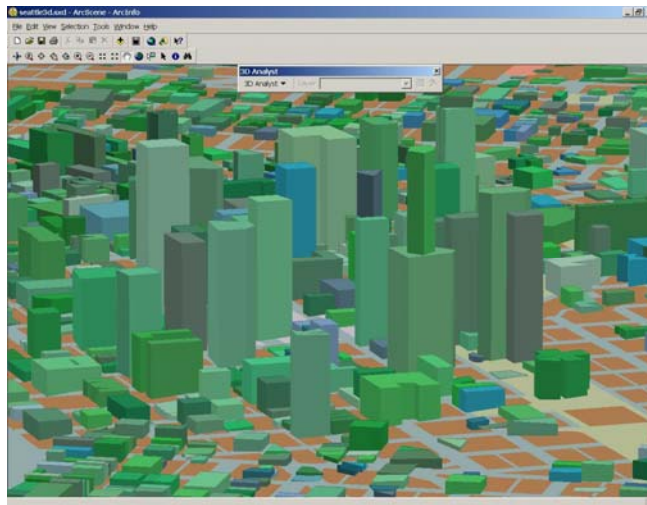
Instructor: Jeffrey Brown
Office: 345 Bellamy
E-mail: jbrown2@fsu.edu
Phone: 644-8519
Office Hours: Tuesday /Thurs 11-12:30
Or by appointment

Course Objectives

This course provides you with an understanding of how geographic information systems can be used to answer questions and solve problems encountered by planners, policy analysts, and researchers. In this course, you will:

- Be introduced to the basic concepts, structures, and functions used in geographic information systems.
- Learn how to apply the techniques of GIS to a wide array of planning and policy-related issues.
- Learn how to effectively disseminate the results of GIS analysis, through both written and verbal communication.

The course will rely extensively on lab-based demonstrations and exercises. We will use the ArcGIS software throughout this course.



Learning Objectives

By the end of the class, you will:

- (1) Demonstrate understanding of basic concepts of GIS design and structure including fundamental concepts of cartography and spatial thinking, GIS data structures, base files, measurement, input, storage, editing, output, and display.
- (2) Demonstrate understanding of the concepts and application of spatial measurement, analysis, and classification, network analysis, and overlay analysis.

- (3) Apply these concepts and methods to analysis of data using ArcGIS software and to development of a research design for answering a spatial planning, policy analysis, or other research question.

Course Format

The class will be conducted as a lecture/discussion session with attached computer labs. I envision the first part of class each week being devoted to lecture and discussion and the second part to discussion and lab demonstration (although this plan is subject to change based on class needs.) Lectures and discussions will build upon assigned readings; thus full preparation prior to each class session is essential, both to the value of the class to you and to your performance evaluation for the course. Lab demonstration sessions are intended to introduce and demonstrate GIS concepts and applications. **You will need to spend additional lab time outside class to complete the lab exercises.**

Please arrive for class on time and do not disrupt the formal lecture and discussion portions of the class by getting up and leaving unless it is absolutely essential. If you must arrive late or depart early, please do so with minimal disturbance. Please respect whomever is speaking by not talking to others and not engaging in computer work during class discussions. Please adhere to university rules that prohibit consumption of food or beverages in classrooms.

Course Materials

There are **three** required texts for this course. The textbooks are available at both *Bill's Bookstore* and the *FSU Bookstore*:

- (1) Mitchell, Andy. 1997. *Zeroing In: Geographic Information Systems at Work in the Community*. ESRI.
- (2) Bolstad, Paul. 2005. *GIS Fundamentals: A First Text on Geographic Information Systems*. Eider Press. Second Edition.
- (3) Ormsby et al. 2004. *Getting to Know ArcGIS Desktop, Second Edition Update for ArcGIS 9*. Environmental Systems Research Institute (ESRI). (includes CD-ROM). Note: Be sure to get this edition of the text.

There are also three readings that are posted to the class **Blackboard** site in the "Course Library":

- (1) Monomier, M. (1993) Chapter 3 on "Visual Variables and Cartographic Symbols" from *Mapping it out: Expository cartography for the humanities and social sciences*. Chicago: University of Chicago Press.
- (2) Huxhold, W.E. (1991) Library Facilities Planning (Pages 120-124) from *An introduction to urban geographic information systems*. New York: Oxford University Press.
- (3) Song, Y., Thompson, G. & Audirac, I. (1998). Land use change around Portland's Banfield light rail stations: A GIS analysis. Tallahassee, FL: Florida State University, Department of Urban and Regional Planning.

Course Requirements

Course requirements include (1) class attendance and active participation in class discussions; (2) preparation of short written synopses of GIS application cases for six class sessions; (3) completion of 10 lab exercises; (4) completion of three lab practicum assignments; (5) completion and presentation of a GIS review paper (roughly equivalent to a seventh synopsis); and (6) completion of a research design that employs GIS analytic methods including (a) a formal paper proposal and (b) a final research design paper.

Synopses summarize the variables, data, methods, findings, and conclusions of assigned readings that describe the application of specific GIS techniques to answer specific planning, policy analysis, or research questions. These should be about 1.5 pages in length.

The *GIS review paper* uses a format similar to the synopses to summarize a professional or scholarly article, book chapter, or professional report of your own choosing to analyze a specific planning issue, policy problem, or research question. The review paper is to be no more than two pages in length. **You will present your summary of the paper in a short, ten-minute, oral presentation to the class.** You should supplement your presentation with appropriate visual aids.

The *research design paper* will focus on an analysis/research problem that is grounded in the scholarly and professional literature of planning or your field if you are not a planning student. The paper will include a description of the research question or problem, a review of relevant literature that describes previous research findings and methods, a statement of specific hypotheses, and a detailed description of the data that would be analyzed, and the GIS and other methods of data analysis that would be used to test the hypotheses. It will not be necessary to perform the actual analyses. An initial **proposal** will be submitted and graded prior to completion of the full research design **paper**. Additional detailed instructions will be distributed.

Grading

Grades will be based on attendance, class participation, preparation of synopses, review paper and presentation, the lab assignments, lab practicum assignments, and the research design proposal and paper.

Attendance at all classes is required. Unexcused tardiness or early departure from class will be recorded as absence. Unless approved by the instructor ahead of time, all absences will be unexcused. **Two unexcused absences will result in the loss of a letter grade.** Four unexcused absences will result in failure of the course. The following and only the following absences are eligible to be excused: religious holidays, as specified in FSU policy; absences due to representing FSU at official functions, including intercollegiate debating or varsity sports events; and verified emergencies and/or illness. While one is not penalized per se for excused absences, s/he is nevertheless responsible for all content missed, including any assignments, knowledge, or skills covered or assigned.

Class participation grades will be based on preparation and active participation in all aspects of class discussion.

Synopses will be graded on a satisfactory/unsatisfactory basis. They are primarily used to stimulate class discussion of real-world applications of GIS.

Review papers and presentations will be graded using a plus/minus letter grade scale (A+, A, A-, etc.). Grades will reflect organization, grammar, and spelling as well as content of the paper—plus the quality of the oral presentation.

Lab assignments will be graded on a 100-point scale. Points will be deducted for incorrect, incomplete, or late (see below) lab reports.

Research design proposals and papers will be graded using a plus/minus letter grade scale (A+, A, A-, etc.). Grades will reflect organization, grammar, and spelling as well as content.

Task (s)	Weight
Class participation	2 %
Synopses (6)	2 %
Review paper and presentation	6 %
Research design proposal	5 %
Research design paper	25 %
Lab exercises (10)	30 %
Lab practica (3)	30 %

Turn in all papers to my mailbox in Room 330 Bellamy or slide them under the door to my office (345 Bellamy). **Assignments must be submitted in hard copy by the deadline** noted on the attached schedule, unless I give you **explicit** alternative directions.

All late papers will be marked down **five points** for every day (24-hour period) they are late. A weekend counts as one day if papers are delivered to my office by 8:00 am Monday. Extensions for individual assignments or a grade of incomplete in the course will only be granted for severe hardship (death in family, illness or injury requiring bed confinement) or extenuating circumstances (fire, earthquake, etc.). Competing pressures from other courses, job requirements, or problems with your personal computer do not qualify as extenuating circumstances (**back up your files!**).

Extensions must be requested before the assignment is due!

Incompletes will have explicit deadlines that will only be extended under extreme circumstances.

Table 1: Letter Grade Scale

Letter	Equivalent Numeric
A+	100
A	96
A-	92
B+	89
B	86
B-	82

C+	79
C	76
C-	72
D+	69
D	66
D-	62
F	≤ 60

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the University’s expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to “. . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University.” (Florida State University Academic Honor Policy, found at <http://www.fsu.edu/~dof/honorpolicy.htm>.)

Any violation of the code, such as plagiarism (copying someone else’s work and presenting it as your own, paraphrasing someone else’s work without proper attribution) or cheating, will not be tolerated in this class. Violations will result in a grade of “F” for this course.

Students with Disabilities

Students with disabilities needing academic accommodation should:

- (1) Register with and provide documentation to the Student Disability Resource Center; and
- (2) Bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the Student Disability Resource Center

97 Woodward Avenue, South

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

sdrc@admin.fsu.edu

<http://www.fsu.edu/~staffair/dean/StudentDisability/>

Schedule of Readings and Assignments*

10/14/05 Version

Dates	Lecture Topic(s)	Readings	Lab Session	Assignment Handed Out	Assignment Due Date
Week 1 1/8-1/12	Introduction; Basic GIS concepts and context; Introduction to COSS GIS Lab and ArcGIS	-Bolstad, Chapter 1, - <i>Getting to Know ArcGIS</i> (GTKAG), pp. 1-18		-Lab #1 -Synopsis #1 -Review paper instructions -Research design instructions	
Week 2 1/15-1/19	Cartography and Spatial Thinking; Map Output	-Bolstad, Ch.2: 25-30; Ch.4: 111-120 - <i>Getting to Know ArcGIS</i> (GTKAG), pp. 1-18 - Monmonier Reading on Blackboard site -Mitchell, Chapter 2	Lab #1: Introduction to ArcGIS		
Week 3 1/22-1/26	Geographic referencing systems	-Bolstad, Chapter 3 -Mitchell, Chapter 4	Lab #2: Cartography & symbolizing features	-Lab #2 -Synopsis #2	-Lab #1 (1/26) -Synopsis #1 (1/26)
Week 4 1/29-2/2	GIS data structures, queries, and storage	-Bolstad, Chapter 2, Chapter 8 -Mitchell, Chapter 6	Lab #3: Joining & relating tables; digital data representation	-Lab #3 Practicum #1	-Lab #2 (2/2) -Synopsis #2 (2/2)
Week 5 2/5-2/9	GIS data: collection and base files	-Bolstad, Chapter 7	Open lab	-Synopsis #3	-Lab #3 (2/9)

10/14/05 Version

Dates	Lecture Topic(s)	Readings	Lab Session	Assignment Handed Out	Assignment Due Date
Week 6 2/12-2/16	GIS data: input	- Bolstad, Chapter 4 - Mitchell, Chapter 9 & 11 - Huxhold reading on Blackboard	Lab #4: Data input and base files	- Lab #4	- Practicum #1 (2/16) - Synopsis #3 (2/16)
Week 7 2/19-2/23	GIS data: editing Peer Review Exercise (2/23)	- Bolstad Chapter 4	Lab #5: Digitizing, event themes, and geocoding	- Lab #5	- Lab #4 (2/23) - Research Design Proposals draft (for group exercise) (2/23)
Week 8 2/26-3/2	Classification and Reclassification	- Bolstad, Chapter 9	Lab #6: Data editing and output	- Lab #6 - Synopsis #4	- Research design proposal (to hand in) (3/2) - Lab #5 (3/2)
3/5-3/9	Spring Break	-		-	-
Week 9 3/12-3/16	Spatial measurement and proximity analysis	- Bolstad, Chapter 9 Mitchell Chapters 3, 5	Lab #7: Classification	- Lab #7 - Synopsis #5 - Research design proposals returned Practicum 2	- Lab #6 (3/16) - Synopsis #4 (3/16)
Week 10 3/19-3/23	More spatial measurement; comparing variables among coverages	- Mitchell, Chapters 8, 10	Lab #8: Spatial measurement, proximity analyses, and buffers	- Synopsis #6	- Lab #7 (3/23) - Synopsis #5 (3/23) - Research design R&Rs (3/23)

Week 11 3/26-3/30	Comparing variables among coverages (cont); network analysis	-Song, et al (1998) reading on Blackboard site	Lab #9: Theme-on-theme, overlay, and network analysis	- Lab #8	-Synopsis #6 (3/30) -Practicum 2 (3/30)
Week 12 4/2-4/6	Statistical surfaces Presentations		Lab #10: 3-D Analyst applications	- Lab #9	- Lab #8 (4/6)
Week 13 4/9-4/13	Special Applications: GPS	Bolstad, Chapter 5	GPS Field Work	Lab 10 Practicum 3	-Lab #9 (4/13)
Week 14 4/16-4/20	Presentations Open Lab				-Lab 10 (4/20) - Research Design (4/20)
Finals Week	Wednesday of Exam Week				-Practicum #3 (4/25)

**Note: This schedule is subject to revision based on class needs.*