

Urban Planning 945-791/591

INTRODUCTION TO URBAN GEOGRAPHIC INFORMATION SYSTEMS

Fall Semester 2017

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Course Time/Location:

Lecture: Tuesday 4:30-6:20, AUP 189

Lab: Tuesday 6:30-9:10, AUP 194

Texts and Equipment	
Chang, Kang-Tsung. <i>Introduction to Geographic Information Systems</i> . 8th ed. New York: McGraw-Hill Education, 2016.	Required. (<i>International version acceptable</i>)
Huxhold, William E., Eric M. Fowler, and Brian Parr. <i>ArcGIS and the Digital City: A Hands-on Approach for Local Government</i> . Redlands, CA: ESRI, 2004.	Lab Text, available on D2L
USB Flash Drive, 8 GB minimum	Recommended

What You'll Learn Here

This course, often called "GIS1", is the first in a series of four offered by the Department of Urban Planning designed to give students a comprehensive understanding of geographic information systems (GIS) use, analysis, and management. In GIS1, we focus on the basics that will make you a productive GIS user. After you complete this course, you should be able to:

- Explain the core components of GIS and their importance
- Understand the uses of vector, raster, and tabular data
- Find data sets and assess their quality and suitability
- Use ESRI ArcGIS Desktop to manage data, perform basic spatial analyses, and create effective maps
- Bring the skills you learn here to your career field, making you a more productive and valuable resource to your employer.

Course Schedule and Assignments

The planned lecture and assignment schedule is shown below, but is subject to change. Textbook readings are shown below, but there are many additional materials listed on the course D2L site. If any changes are necessary students will be notified of changes as soon as possible. The Midterm will be held as scheduled.

Date	Lecture Topics	Pre-Lecture Reading (plus D2L materials)
9/5	WHAT IS GIS? <ul style="list-style-type: none"> • Course overview • Overview of GIS at UWM • GIS past and present • Applications of the technology 	
9/12	THE ART (AND SCIENCE) OF A MAP <ul style="list-style-type: none"> • Principles of cartography • Effective graphic and digital communication Guest speaker: Donna Genzmer, UWM Cartography and GIS Center Director OTHER TOPICS TBA <i>Due: Statement of Purpose</i>	Chang, chapter 1
9/19	THE PARTS OF URBAN GIS: SOME ASSEMBLY REQUIRED <ul style="list-style-type: none"> • Hardware and software • People and organizations • Data • The urban environment • Technology and the Internet 	
9/26	GIS DATA IN DEPTH <ul style="list-style-type: none"> • Vector data model • Topology • Geocoding • Raster data model 	Chang, chapters 3, 4.1-4.4, 4.7, 16.1-16.3
10/3	GIS DATA IN DEPTH, PART II <ul style="list-style-type: none"> • Tabular data • Database basics <i>Due: Paper</i>	Chang, chapters 8, 9, 10.1-10.3
10/10	OBTAINING AND LOCATING DATA <ul style="list-style-type: none"> • U.S. Census Data • State and Local Data Sources Guest speaker: Stephen Appel, American Geographical Society Library INTRODUCTION TO THE FINAL PROJECT	Chang, chapter 5

10/17	PARCELS AND THE CADASTRE DATA ACCURACY AND QUALITY <ul style="list-style-type: none"> • Datums and coordinate systems • Accuracy and scale • Scale vs. Precision 	Chang, chapter 2, 7
10/24	SPATIAL ANALYSIS <i>Due: Final Project Proposal</i>	Chang, chapters 10.4, 11, 12.1, 12.3, 12.8
10/31	MIDTERM EXAM	
11/7	EXAM REVIEW FINAL PROJECT DISCUSSION	
11/14	ADVANCED GIS TECHNIQUES -Geocoding -Network Analysis -Raster Analysis	
11/21	GIS IN PROFESSIONAL PRACTICE INTERNET GIS - Functionality - User Experience - Examples and Inspiration	
11/28	FINAL PROJECT WORKING SESSION	
12/5	FINAL PROJECT WORKING SESSION	
12/12	FINAL PROJECT PRESENTATIONS	
12/19	NO CLASS <i>Due: Final Project Paper at 4:30 pm</i>	

COURSE GRADING:

In GIS 1, learning concepts and practical skills are equally important, so lab and lecture each account for 50% of your overall grade. Graded course work is weighted as follows:

Assignment	Component	Weight
Paper	Lecture	10%
Midterm Exam	Lecture	20%
Lab Exercises	Lab	30%
Final Project (40% overall)		
Data Analysis and Presentation	Lab	20%
Paper	Lecture	20%

Participation

Regular attendance and active participation in lecture and lab is expected, and can positively affect your course grade. Quizzes may be conducted during lecture to assess progress or offer extra credit. Lab policies are described in the lab syllabus.

Timeliness and Completeness

Meeting deadlines in the professional world, and in this course, are essential for your success. All assignments are due in a Dropbox at the beginning of lecture or lab unless stated otherwise. Late assignments will receive an automatic deduction of **10% of the assignment's starting value per day up to 50%** (no negative grades). **All assignments must be completed to receive a passing course grade.**

All that being said I realize life happens: illness, job responsibilities, and family needs are unpredictable. Please contact me or your TA if circumstances affect your ability to complete assignments, and if possible, before the due date. Accommodations can often be made, although written proof (such as a doctor's note) may be required.

Grading Scale

I use a hybrid system of standard percentage grades and a curve to determine final grades. For example, if you earn 82% composite score, you would receive at minimum a grade of B- (80%-83%). Your final letter grade may be higher if I adjust these ranges downward to account for assignments that prove to be difficult. Please consult the instructor if you have concerns about your progress and scores.

ACADEMIC MISCONDUCT:

Academic misconduct is treated very seriously in this class. Academic misconduct is defined as any activity that is deemed as compromising the academic integrity of the institution, or otherwise subverts the educational process. Academic misconduct includes:

- (1) Violation of course rules as outlined by the course syllabus;
- (2) Providing or receiving of information during exams;
- (3) Submitting plagiarized work for an academic requirement; and/or,
- (4) Serving as, or enlisting the assistance of, a 'ringer' or substitute for a student in the taking of exams.

The perpetrator of any of action deemed as academic misconduct will face procedures in accordance with the University Academic Misconduct Policy. Please consult with the instructor or TA if you have ethics questions or concerns.

SPECIAL ACCOMODATIONS:

If you require any special accommodations for this class, please provide a copy of your VISA from the ARC as soon as possible.

OTHER COURSE POLICIES:

This course adheres to campus policies regarding religious observances, active military service, incompletes, discriminatory conduct, academic misconduct, complaints about the course, grade appeals, and firearms. For details about these policies, see:

http://www4.uwm.edu/secu/news_events/upload/Syllabus-Links.pdf