

## UPP 508 Geographic Information Systems for Planners Spring 2008

Instructors: William “Max” Dieber (maxdbr@uic.edu) and Nina Savar (nsavar@uic.edu)

CRN 26683 Monday 6:00 – 9:00 pm, SEL 2058

**Office Hours:** By Appointment (via email) is required. If you need to see us without an appointment, call 996-3860 BEFORE you come down to the lab.

Max and Nina have worked as colleagues in GIS and data “wrangling”/analysis for 20 years. Employed by the Northeastern Illinois Planning Commission, Nina starred in the role of GIS Manager, ArcInfo specialist, and metadata evangelist while Max served as Research Department manager, demographer/statistician, and ArcView specialist.

We bring different points of view on many things to this class. You will see some of that during class but don’t worry because behind that mutual “disrespect” is the shared belief that you only learn and grow through continuous challenges to what you thought you knew. Indeed, we view this course as collaboration between teachers and students. We all will learn.

Primarily, this course is about learning ArcGIS Desktop, although we will explore a range of GIS issues along the way. The main text book, Getting to Know ArcGIS Desktop, is written for ArcGIS 9.0 (ArcView level). The SEL 2058 computers are loaded with ArcGIS 9.2 (ArcInfo level) as are the computers in the CUPPA lab. The six month demonstration version of the software packaged with the main text book is either ArcGIS 9.2 or 9.1 (ArcView level for both versions) depending on where you acquire the book. Last semester, the bookstore stocked books with 9.1 (we have asked them to get 9.2 for spring). Students acquiring books through Amazon sometimes got 9.2, sometimes 9.1. Books ordered from ESRI ([www.esri.com](http://www.esri.com)) come with 9.2. If you get a 9.1 version, DO NOT INSTALL IT BEFORE TALKING WITH US. We can show you how to acquire a 9.2 demo to install. This is important because not only are we teaching 9.2, but 9.1 installed along side Internet Explorer 7 will encounter problems.

**Student Evaluation:** Performance will be evaluated on the basis of class attendance (28 points), final project (30 points), and eight extra exercises and a map exercise (42 points).

42 points	8 Extra Exercises worth 5 points each plus a 2 point Map Exercise	Due within week after exercise assigned 1 point subtracted for late exercise
30 points	Final Project	Oral presentations during week 13, 14 Written report due Friday, May 2, 2008
28 points	Attendance	2 points subtracted per missed class

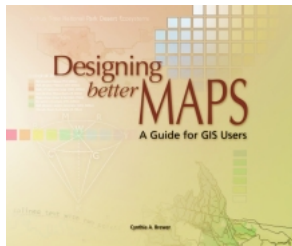
Usually each class will include lecture and lab. Attendance in class is expected.....and attendance means all of class!

Extra Exercises are due to CUPPAH B-15 by end of day (5pm) on Friday. **We will not accept exercises via email.** If we ask you to redo an exercise (and most of you will get that opportunity), you have two weeks to complete it for full credit. There will be only 1 redo opportunity per exercise. Redone exercises **MUST** be handed in with your original exercise.

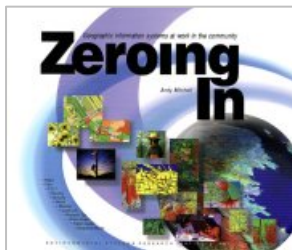
### Required Books and Materials:



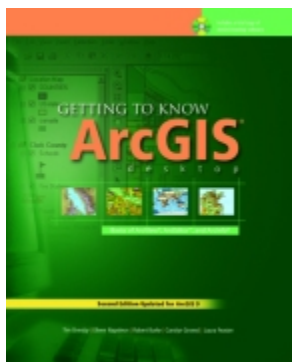
USB flash drive capable of holding at least 512 MB of data (but bigger would be better).



Brewer, Cynthia A. 2005. *Designing Better Maps – A Guide for GIS Users*, ESRI Press, Redlands, CA. ISBN: 1-58948-089-9.



Mitchell. 1998. *Zeroing In – Geographic Information Systems at Work in the Community*. ESRI Press, Redlands CA. ISBN: 1-879102-50-1.  
A good summary of examples of things you can do with GIS.



Ormsby, Napoleon, Burke, et al. 2004. *Getting to Know ArcGIS Desktop, 2<sup>nd</sup> Edition* updated for ArcGIS 9. ESRI Press, Redlands CA. ISBN: 1-58948-083-X. Two disks are packaged with this text. One contains the exercise data (see note below on this information). The other is a 6 month ArcView version of the software. You may install this ArcView software on your personal computers. DO NOT install it on UIC equipment. In order to register this software easily, your computer must have internet access. Sorry, MAC users...it won't work on your computers. Previously used versions won't install on any computer. It also will not install on computers that previously may have had the 6 month version installed. ESRI's note on the software (9.2

version) appears below:

**Trial Software:** Included with the book is a fully functioning 180-day trial version of ArcView 9.2 software on DVD, as well as a CD of data for working through the book's exercises. Once installed and registered, the single-use software cannot be reinstalled, and the time limit cannot be extended.

**Operating System(OS):** The single-use ArcGIS Demo Edition software on the CD in this edition requires the Microsoft® Windows® XP or Windows 2000 operating system.

**Hardware requirements:** A minimum 1GHz processing speed; 512 MB RAM; 1.5 GB free hard disk space, including 50 MB on the operating system drive; an additional 285 MB hard disk space is required for the exercise data.

**Reference Books:** (not required but useful)

\*\* indicates that pdf of document is available at Q://upp508s8/library on CUPPA lab computers.

Crosier, Booth, Dalton, et al. 2004. *ArcGIS 9 – Getting Started with ArcGIS*. ESRI Press, Redlands CA. \*\* filename: Getting\_Started\_with\_ArcGIS.pdf

Croswell and Wernher. 2004. *GIS Program Revenue Generation and Legal Issues in Public Sector Organizations*. Urban and Regional Information Systems Association. Park Ridge, IL. ISBN: 0-916848-32-9

ESRI Staff. 2004. *Understanding Map Projections*. ESRI Press, Redlands CA. \*\* filename: Understanding\_Map\_Projections.pdf  
ESRI Staff, 2004. also on Blackboard

*What is ArcGIS*. ESRI Press. Redlands CA. \*\*  
filename: What\_Is\_ArcGIS.pdf

Harlow, Pfaff, Minami, et al. 2004. *Using ArcMap*. ESRI Press, Redlands CA. \*\*  
filename: Using\_ArcMap.pdf  
A very important resource

Krygier, Wood. 2005. *Making Maps – A Visual Guide to Map Design for GIS*. The Guilford Press, New York. ISBN: 1-59385-200-2

Mitchell. 1999. *ESRI Guide to GIS Analysis – Geographic Patterns and Relationships*, Volume 1. ESRI Press, Redlands CA.  
ISBN: 1-879102-06-4

Mitchell. 2005. *ESRI Guide to GIS Analysis – Spatial Measurements and Statistics*, Volume 2. ESRI Press, Redlands, CA.  
ISBN: 1-589481-16-X

O’Looney. 2000. *Beyond Maps – GIS and Decision Making in Local Government*. ESRI Press, Redlands CA. ISBN: 1-879102-79-X.  
Provides useful background in understanding uses of GIS by local government; fertile place for ideas about your final projects

Thomas and Ospina. 2004. *Measuring Up – The Business Case for GIS*. ESRI Press, Redlands CA. ISBN: 1-58948-088-0 Interesting examples of use of GIS....see pp25 and 26 for project created by course instructors!

Vienneau, Bailey, Harlow, et al. 2004 *Using ArcCatalog*. ESRI Press, Redlands CA. \*\*  
filename: Using\_ArcCatalog.pdf

Zeiler. 1999. *Modeling Our World – The ESRI Guide to Geodatabase Design*. ESRI Press, Redlands CA.  
ISBN: 1-879102-62-5

### **Important Notes about Data for Course**

The lab portions of each class may require you to access three types of exercise data sets. These data will not be installed on the lab computers. You will have to bring it with you to class, copy them from Blackboard, or copy the needed files from another classmate during class. To do this **you will have to acquire an USB flash drive capable of holding at least 512 MB of data.**

There are three different data sets you will need to load on to your USB flash drive as the course proceeds.

1. The first supports the exercises in *Getting to Know ArcGIS*. We expect you to work through all the exercises in this book. **BEFORE THE FIRST CLASS** you should try to get these data for the exercises in Chapters 3 and 4 of *Getting to Know ArcGIS* on your USB flash drive. There are two methods to getting these data:
  - A. You could install the exercise data from the data CD contained in *Getting to Know ArcGIS* onto your personal computer (following instructions starting on page 555 of that text) and then load it on to your USB flash drive; OR
  - B. During the first class, we will distribute a CD containing the exercises. You can copy the exercises from the CD to your USB flash drive.
2. Data for Class Exercises. These data will appear on the course's Blackboard site as they are needed in the course. Refer to the class schedule to understand what data sets are needed by class dates.
3. Data for Extra Exercises. These data will appear on the course's Blackboard site as they are needed in the course. Refer to the class schedule to understand what data sets are needed by class dates.

### **Schedule**

The schedule appears on Blackboard and is attached here. It is highly likely that it will be adjusted as class needs evolve over the semester. Updates will appear on Blackboard so keep looking and watch for the revision date on the upper right corner of the schedule.

### **Working Together**

The instructors believe that it is easier to comprehend and absorb the course content if you work with partners. We strongly urge you to work with your classmates both in the class/lab as well as outside of class. It is easy to get stuck in the logic of GIS operations. Partners should be able to push their way through what otherwise might be very frustrating challenges.

**BUT A CAUTION:** It must be evident to the instructors that the exercises you hand in are your own work. The point here is to work together to figure out how to do the exercises but *do them on your own*.

**Food and Drink in the Lab**

ACCC is **very** adamant about keeping food and drink out of lab. The penalties are stiff (loss of use of your netID). Keep bottles of water, munchies or whatever in your bags. If you need to take care of thirst or hunger, get up and go out to hall.

November 26, 2007

# UPP 508 Spring 2008 Schedule

revision date: 24-Nov-07

CRN 26683 Monday, 6:00-9:00 pm

All Classes in SEL 2058 -- room is hot so dress in layers

GTK="Getting to Know GIS"; DBM="Designing Better Maps"; CE=Class Exercises; EE=Extra Exercises; ME=Map Exercises  
Z=Zeroing In; UMP=Understanding Map Projections (pdf will be available on Blackboard)

Week	Date	TOPIC	TOPIC DETAILS	In Class	Before Class
Wk 1	14-Jan-08	Course Logistics & Content Basic Things You Need to Know Introduction to ArcGIS Interface	File Management, Path Names, Screen Captures Exploring ArcMap & ArcCatalog & Help files	GTK Ch 3 CE A	GTK Ch 1,2 DBM Ch 1
Wk 2	28-Jan-08	GIS Concepts Getting to Know Your Data (1)	More than Maps: Spatial Reasoning Symbolizing and Classifying	CE B	GTK Ch 4, 5, 6 DBM Ch 4, 5, 6
Wk 3	4-Feb-08	Getting To Know Your Data (2) Keeping a Project Log	Labeling, Identifying Data, Selection by Attributes Intro to Logs	Review EE 01 CE C	EE 01 GTK Ch 7, 8 (to p.214) DBM Ch 2, 3
Wk 4	11-Feb-08	Introduction to Final Project Adding to Your Data	Examples of Final Projects Joins, Relates, Selection by Location	Review EE 02 Z Review CE D	EE 02 GTK Ch 9, 10 Assigned Z Chapter
Wk 5	18-Feb-08	Making New Data (1)	Exporting Joins and Selections Dissolving and Clipping	Review EE 03 CE E	EE 03 GTK Ch 11
Wk 6	25-Feb-08	Making New Data (2)	Buffers, Unions, Intersects Small Group Discussion of Proposals	Review EE 04 CE F Proposal Discussion	EE 04 GTK Ch 12 to p 323 Preliminary Proposal
Wk 7	3-Mar-08	Data Wrangling Calculate Attribute Values	Moving data from Excel to GIS Calculating Attribute Values and Areas	CE G	GTK Ch 12 from p 324 Project Proposal Due
Wk 8	10-Mar-08	Getting To Know Your Data Even Better	Coordinate Systems, Datums, Projections	Review EE 05 CE H	EE 05 GTK Ch 13 UMP
Wk 9	17-Mar-08	Where to Find Data Metadata - What, Why, Where	Using American Factfinder & Geography Network; Using Metadata	Review EE 06 CE I	EE 06
Wk 10	31-Mar-08	Making Maps for Presentation Map Design	Layout View; Map Elements	CE J	GTK Ch 18,19 DBM Ch 7
Wk 11	7-Apr-08	Geocoding	Using Data with Addresses	CE K ME 1	EE 07 GTK Ch 17
Wk 12	14-Apr-08	Geodatabases Simple Feature Editing	How Geodatabases are different from shape files; Creating Features & Editing Features	Review EE 07 Review EE 08	EE 08 GTK Ch 14 - 16
Wk 13	21-Apr-08	Presentation of class project			
Wk 14	28-Apr-08	Presentation of class project			

Final Paper Due by 5pm in CUPPAH B-15, Friday May 2, 2008