

UPP 462 Intermediate GIS
Fall 2011
Tuesday 6:00 – 9:00 pm, SEL 2049, CRN 32217 & 32218

Primary Instructors: Kevin Gibbs (kgibbs3@uic.edu) & Douglas Sharp (dsharp3@uic.edu)

Office Hours: Kevin has open office hours between 9:00 am and 4:00 pm and his office is located at the UIC West Campus Research Center at 1747 W. Roosevelt Rd, 5th Floor. Doug will be available before class at SEL upon appointment. All students are asked to request office hour appointments 24 hours in advance.

The TA for this course will be Diego Silva Ardila who requests that all appointments be secured prior to the meeting and scheduled by email (diegosilvaardila@gmail.com). Diego's Spring 2011 availability:

- MONDAY 10 am - 2 pm
- TUESDAY 10 am - 6 pm
- WEDNESDAY 10 am - 6 pm

Philosophy:

This course is about developing client/customer relationship skills. That's right, the instructors are your supervisors and you are providing the service. As a GIS professional, you must maintain a high standard customer service or risk losing a client or justifying your job each budget cycle. In this course, you will work for us and as your supervisors we will give you basic direction but won't do your work. Your project log is your billing sheet and outlines the project scope in addition to serving as documentation. Blackboard will be your version of Microsoft SharePoint. Homework and presentations are deliverables and your grade represents your employee review.

Objectives and Expectations of Course:

Our three main objectives are to instill:

1. independent working styles: This doesn't mean you work in a box but it does mean there will be limited instructor hand holding. We expect you to collaborate with other students by forming work groups or using the Blackboard Forum. We also encourage you to research problems via the ESRI support website or searching the web. This is how GIS is practiced and in this way we expect you to become a more resourceful GIS professional.
2. good data processing habits: You are expected to incorporate all the lessons you learned in the previous course. No spaces in file names, etc.
3. techniques for project organization: Yes, you must still complete project logs. If you correctly process the homework we expect your log to include only the basic steps taken to complete the assignment successfully. Please do not include trials and errors unless you can't complete the work and request assistance.

We reinforce topics previously taught in our introductory course and advance our GIS use by introducing several extensions, including Network Analyst and Spatial Analyst. We teach students feature editing and geodatabase structures. In addition, we apply GIS to several applications, along the way covering data collection and compilation techniques; discovering data resources; learning how to teach each other GIS topics; applying GIS to a final project of the student's choice; pushing layouts to Adobe Illustrator for post

processing; and learning about raster data. Certain topics recur throughout the course, such as geodatabases and data collection and wrangling.

Students will become more comfortable with the ArcGIS interface after this course and feel more secure about data management, online help resources, and spatial analyses. The pace of this course is fast. Because many of the lessons build upon previous assignments students are expected to meet deadlines and request assistance when necessary.

About Us:

Kevin Gibbs has been the GIS Manager at the UIC Institute for Health Research and Policy since 2008 and received his MUPP from CUPPA in 1999. From 1998 to 2008 he was a GIS Coordinator for the City of Chicago. Kevin served two terms on the board of the Illinois GIS Association and also teaches GIS at Elmhurst College.

Doug Sharp is currently a Research Associate at Northwestern Memorial Hospital where he is working on GIS based research focused on trauma care. He has a MURP from the Graduate School of Public and International Affairs at the University of Pittsburgh, a Ph.D. from the School of Engineering at the University of Pittsburgh and a GSAV Certificate from UIC.

Nina Savar has worked in GIS and data “wrangling” for over 20 years. Previously employed by the Northeastern Illinois Planning Commission (NIPC), Nina starred in the role of GIS Manager, ARC/INFO specialist, and metadata evangelist.

Max Dieber served as NIPC's Research Department manager, demographer/ statistician, and ArcView specialist for 30 years.

Because of our varied experiences, we bring different points of view to many topics in this class. We constantly challenge what we know and believe these challenges strengthen our understanding of the finer points of GIS. Even more than our introductory course, this course is a collaboration between teachers and students. We all will learn from each other.

Student Evaluation: Performance will be evaluated on the basis of homework, 2 student presentations, a final project and attendance. The relative weights are listed below:

15 points	Homework	There are 9 weekly assignments. Some assignments require more significant time commitments than others and will be given more credit.
10 points	Oral Assignment 1	Finding Data for GIS
20 points	Oral Assignment 2	Special Topics in GIS
15 points	Final Project	Presentation
25 points	Final Project	Written Report
15 points	Attendance	One point awarded for each class student is present at
+5 points	Extra Credit	As announced

If you cannot make a certain class, you are still responsible for the material covered. Missing a class for any reason will result in a loss of attendance credit for that lesson. There are no exceptions so plan accordingly.

Submitting Assignments:

Unless otherwise arranged, the Drop Box in Blackboard is the only accepted method of assignment submission. Each assignment will have its own folder in this drop box. Assignments must be submitted to Blackboard before then next class meeting unless otherwise specified.

Because we review the previous week's assignment before class, assignments turned in after class meets will be reviewed favorably but receive 50% credit (must be turned in during the week the assignment was originally due). Oral presentations and reports are always due before class to be considered for full credit. Students who turn in the final project late will receive an incomplete for the course.

Effort will be made to return graded assignments by the Tuesday before class. We may return assignments to you with notes and corrections using Microsoft Word's Track Changes feature. Project logs must be submitted in MS Word format. Maps must be submitted as imbedded JPG files within your project log document.

All assignments will be submitted with the following naming convention:
Upp462fall2011_Assignment[#]_Lastname_Firstname.docx

Requesting Help:

At times students may need help with assignments or remedial training. We established a protocol for this as follows:

Students should anticipate issues when working on the assignments. A first line of defense is time. Make sure you start the work the week of class. Waiting until for following week to crack the book open again really isn't an option. If you encounter a problem you should search for solutions in the help menu, at the ESRI Support website, or internet search. We suggest you explore working in groups. Collaboration is your best friend. We also expect these collaborative efforts to be creative and if you can't solve the problem then try to come up with a homebrew solution.

Your second option is to contact the TA for this course and set up an appointment to discuss the issues.

If you are still stumped please email us. Included in this email will be a subject with the following protocol (UPP462: Homework Question: [Topic Specifics]). This way, instructors will be able to best prioritize our class emails.

At the same time you email us you will need to create a "customer support help ticket" by posting the problem to the Blackboard Discussion Forum. Each week we will open a new forum topic for that lecture. Instructors and TA will ONLY respond to forum posts and NOT via email as this allows others to research solutions as opposed to a one on one conversation via email. Think of this as your online help ticket. We also encourage other students to submit their solutions via Blackboard Discussion Forum.

Student concerns communicated via twitter, text, Facebook or other social network, Google Talk, etc will not be acknowledged as professional contact.

Instructors have a goal to respond to concerns within 1 business day. Efforts may be made to assist students over the weekend or holidays but they should not expect a response until the next business day.

Required Software & Materials:

All work will be conducted using ArcGIS version 10 at the ArcEditor or ArcInfo license levels.

ArcGIS software is available for download at the University of Illinois' Webstore <http://webstore.illinois.edu>. An installation guide is available on Blackboard. The Webstore's ArcGIS license level is ArcInfo.

UDVL will distribute a free student ArcEditor license from ESRI. ArcEditor will not be sufficient for all the work we plan to assign in this course. Some lessons may only be completed using ArcInfo.

As of 10 September 2010, ArcGIS is installed at the following on-campus locations:

SPHPI B34

SPHPI 178

SPHPI 523

SPHPI Library

SCE 408

SEL 2058

SEL 2249

SEL 2249F

CUPPA computer lab (2nd floor)

CUPPA room B17

USB flash drive capable of holding at least 2 Gb of work.

ACCC associated labs operate a Lost and Found. If you forgot your flash drive in a ACCC lab please visit the lab steward at SEL 2265 (across from the vending machines) and bring your UIC ID.

In addition, a series of pdf's with tutorials and other information will be uploaded to Blackboard.

Online Assignments/ESRI Virtual Campus:

Many lectures are supplemented by online instruction via YouTube or at the ESRI online resource named the "Virtual Campus." Each student is responsible for completing the Virtual Campus lectures as identified in the homework schedule.

To access courses at the ESRI virtual campus:

1. Go to <http://training.esri.com>. Click "My Courses" > "My Virtual Campus Courses" If you already have an ESRI Global Account, log in using your username and password. If you do not, click "Create New Account." BE SURE TO USE YOUR @UIC.EDU EMAIL.

2. Start Your New Course

Click "Start a new course". If needed, type your 14-character Course Access Code in the field provided and click "Go." Follow the instructions on your screen.

3. Go To Class

From your course list, click the course title to begin.

To acquire ESRI Virtual Campus access codes you must request them from the University of Illinois Webstore at: <http://webstore.illinois.edu>. You must login using your UIC net ID and then search for ESRI products. Copy the name of the course into the body of an email and send the request to webstore@illinois.edu

Special Accommodations:

Students requiring specific accommodation please contact the UIC Disability Resource Center at: 1200 W. Harrison St. 1190 SSB (MC 321) or email: drc@uic.edu (312) 413-2183 Voice or (312) 413-0123 TTY or (312) 413-7781 FAX

Video Relay Service: Call 1-866-327-8877, when asked, provide the name of the person you are trying to contact and the videophone #312-413-0123. For more information about the DRC:
http://www.uic.edu/depts/oa/disability_resources/index.html

Reference Texts:

This course does not require a textbook. The references below may be helpful but are not required.

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

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

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

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

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

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!

Schedule:

WEEK	DATE	TOPIC	HOMEWORK (To be turned in the following week)
Wk 1	8/23	Course Logistics & Content Review qualifying exercise Getting Data from CLEARMAP	Homework Week 1 (1.5 points): 1. Virtual Campus: Basics of the Geodatabase Data Model 2. Collect CLEARMAP data
Wk 2	8/30	Intro to Geodatabases Address matching crime data More about data Project Logs, remember them?	Homework Week 2 (2 points): 1. Address match ClearMap crimes in Chicago 2. Finding Data Project Proposal 3. Virtual Campus: Creating/Editing/Managing Geodatabases
Wk 3	9/6	Geodatabases 2 • Domains • Subtypes Finding Data Project Assigned	Homework Week 3 (1 point): 1. Virtual Campus: Working with Geodatabase Domains and Subtypes (for ArcGIS 10) 2. Virtual Campus: Working with Map Topology in ArcGIS
Wk 4	9/13	Geodatabases 3 • Annotation & Topology	1. Turn in Finding Data Presentation prior to next week's class 2. Virtual Campus: Understanding Map Projections
Wk 5	9/20	Finding Data Presentations	Homework Week 5 (3 points): 1. Prepare geodatabase for editing 2. ESRI Editing Tutorial 3. Guide to Editing Tools 4. Editing Features
Wk 6	10/4	Editing GIS Data	Homework Week 6 (1 points): 1. ESRI Demo Videos: Network Analyst 2. Virtual Campus: Creating and Editing Geodatabase Features with ArcGIS Desktop 3. Network Analyst Tutorial 4. Download School Grounds
Wk 7	10/11	Network Analyst Special Topics Project Assigned	Homework Week 7 (1 point): 1. Crime Analysis Using Network Analyst 2. Virtual Campus: Exploring Spatial Patterns in Your Data Using ArcGIS 10 3. Blackboard readings: Statistica.pdf
Wk 8	10/18	Spatial Statistics ILGISA Conference	Homework Week 8 (2 point): 1. Spatial Statistics: Analyzing Spatial Distribution of Crime 2. Dengue Fever Exercise Questions
Wk 9	10/25	Spatial Analyst Final Project Assigned	Homework Week 9 (2.5 points): 1. Using ArcGIS Spatial Analyst tutorial 2. Virtual Campus: Learning ArcGIS Spatial Analyst 3. Final Project Proposal
Wk 10	11/1	Special GIS Topics Presentations	Homework Week 10 (1 point): 1. Final Project Proposal Revisions
Wk 11	11/8	Spatial Analyst II	1. Final Project Process Flow

Wk 12	11/15	Field Data Collection Project Project management Projection Review Open Lab	Work on Final Project & Collect Data
Wk 13	11/22	Field Data Collection Project Georeferencing Batch processing Guest Presenter/Site Visit Open Lab	Work on Final Project & Collect Data
Wk 14	11/29	Final Project Presentations	
Wk 15	12/9	Written Final Project Due	