UP 6700/GPH 3600
Intro to Geographic Information Systems
Fall 2016
Tuesdays, 12:30-3:50pm
Cart Lab, 0223 State Hall

Dr. Carolyn G. Loh
3215 FAB
313-577-0541
cgloh@wayne.edu

Office hours Thursdays 4-5pm and by appointment. Please feel free to make an appointment with me to meet in the Cart Lab if helpful.

Learning Outcomes: By the end of the course students will understand how and why GIS works, be familiar with ESRI ArcGIS software, and be able to perform basic mapping, editing, and spatial analysis functions. By the end of the course, students will also be able to answer a research question using GIS.

Course Materials
There are two required texts for this course.

- Price, Maribeth. 2015. *Mastering ArcGIS, Seventh Edition*. New York: McGraw Hill. Previous editions will not work!
- The FREE online GIS textbook by Dr. Michael Schmandt. You can find it at: http://giscommons.org/

Price is available at the campus bookstore or on Amazon. Other course readings will be made available on Blackboard.

I will have free one-year ArcGIS software licenses available for everyone to install on a laptop or home computer, so that you can work on assignments at home.

If you have a reliable laptop, you may find it helpful to bring to the lab and use it to do your in-class work so that you do not have to switch computers. It is highly recommended that you at least bring to class a USB flash drive of 2GB or higher.

Course Requirements
You will be evaluated based on one mid-term exam, one final project, ten lab assignments, and class attendance and participation. Details on the project will be available on Blackboard and discussed in class. The percentages for these are:

Lab work:	55%
Mid-term:	15%
Final project	20%
Class participation:	10%

Assignment Policies
Most assignments will be due on Blackboard. Late work will be marked down 10% for every twenty-four hours after the due date (even if it is turned in just a few minutes late—I want you to participate in the current lab, not spend the time catching up on the previous one). University policies on academic honesty will be rigorously enforced. If you are not sure whether something is plagiarism or not, talk to me *before* submitting your assignment (see Collaboration below). The discovery of plagiarism will result in an automatic failure for that assignment, and, depending on the severity of the situation, potentially an F for the course.

Communications
I will do my best to answer emails by the next "business day." Office hours are an even better way to get questions answered!

Collaboration
I expect and encourage collaboration on lab assignments. Appropriate collaboration could include things like helping a classmate find a menu item in the program, comparing independently calculated answers to a homework question, or explaining to a classmate how you got an answer. In all these situations, though, each person must do his or her own work. Simply copying a classmate's answers to an assignment constitutes plagiarism and will be treated as such (see above). If you are concerned that you are crossing the line, or you don't understand where the line is, ask! Collaboration of any kind is not appropriate on the midterm or the individual project.

Class Participation/Attendance
Your class participation grade includes your physical presence in lecture and lab and your willingness to ask questions and help others. In addition to contributing toward your participation grade, you will find that doing all of these things is highly correlated with higher grades on other assignments.

Cart Lab Procedures and Rules
You must bring your OneCard to Yvonne Maxwell in the DUSP main office at 3198 FAB to get Cart Lab access. Lab hours are M-Sat, 8am-8pm. There is NO eating in the Cart Lab. Water bottles with caps are acceptable. You may NOT download any program, app, song, plugin, anything, onto the Cart Lab computers. They are there to use for GIS class assignments and projects only.

Data
It is your responsibility to manage and back up your data. We share the computers in the lab with other classes, so, while you can save things to the lab computers, you should ALWAYS back everything up on a flash drive AND another computer (flash drives can fail). ArcGIS is a temperamental program that sometimes corrupts data even when you don't do anything wrong, and it can happen at any time. If you lose something, it may take you many hours to recreate it. So, back up early and often!!

Disability
If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TTY). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. PLEASE make these arrangements immediately after the start of the semester: I cannot make accommodations retroactive.

COURSE OUTLINE

Date	Topics	Readings	Assignments
Sept. 5	Introduction, History of GIS, and Getting Started with ArcGIS	• Price, Introduction • Schmandt, Welcome and Chapter 1 (www.giscommons.org) • Drummond, William, and Steven P. French. 2008. "The Future of GIS in Planning: Converging Technologies and Diverging Interests. *Journal of the American Planning Association* 74(2), 161-174. (Blackboard) • Mapping cemeteries (Bb) • NASA fighting phragmities (Bb)	
Sept. 12	Data Structure and Organization	• Price, Chapters 1 and 2 • Schmandt, revisit Chapter 1; Chapter 2	Lab Assignment 1
Sept. 19	Coordinate Systems and Map Projections	• Price, Chapter 3 • Schmandt, Chapter 3, Introduction and Earth sections • Monmonier, Mark. 1996. How to Lie with Maps. Second Edition. Chicago, IL: University of Chicago Press. Chapter 2. (Blackboard)	Lab Assignment 2 due before class
Sept. 26	Thematic Mapping and Data Presentation	• Price, Chapters 4 and 5 • Monmonier Chapters 4 and 11 (Blackboard) • Kent, Robert B., and Klosterman, Richard E. (2000). "GIS and Mapping: Pitfalls for Planners." *Journal of the American Planning Association* 66(2), 189-198. • Schmandt, Chapter 6	Lab Assignment 3
Oct. 3	Attribute Data The Census and GIS	• Price, Chapter 6 • Schmandt, revisit Chapter 2, Phase 1; Chapter 4 • "Improve urban infrastructure?" (Bb)	Lab Assignment 4
Oct. 10	Querying	• Price, Chapter 8 • Schmandt, Chapter 5, Introduction and Selection and Measurement	Lab Assignment 5
Oct. 17	Spatial Joins	• Price, Chapter 9 • Schmandt, Ch. 5, Overlay Analysis	Lab Assignment 6
Oct. 24	IN-CLASS MIDTERM EXAM		

Oct. 31	GIS Project Design and Implementation Data Quality and Accuracy Mobile GIS PPGIS	• Price, Chapter 14 • Schmandt, Chapter 2, Phase 2 to end • Gammino et al. http://jid.oxfordjournals.org/content/210/suppl_1/S98.full • Brown et al. (Bb)	Lab Assignment 7
Nov. 7	Map Overlay and Geoprocessing	• Price, Chapter 10 • Schmandt, Chapter 5, revisit Overlay Analysis and read to end • Silberman & Rees 2010 (Bb) • Truffles and GIS (Bb) • Smiley et al. (Bb)	Lab Assignment 8
Nov. 14	Editing Spatial Data	• Price, Chapters 7 & 12 • Schmandt, Ch. 3, Map Preprocessing	Lab Assignment 9
Nov. 21	Geocoding/Raster (your choice)	• Price, Chapter 10 from 6th edition (Blackboard) • Chang (Bb) *or* • Price, Chapter 11	Lab Assignment 10
Nov. 28	Guest lecture, TBA	TBA	
Dec. 5	Individual Project Presentations		Powerpoint due noon
Dec. 11	FINAL PROJECTS DUE NOON MONDAY, DECEMBER 11		