GEO 385 – Introduction to Geographic Information Systems
Fall 2009

Instructor:

Dr. Wen Lin
Office: 2025 Cowley Hall Phone: 785-8402 Email: lin.wen@uwlax.edu
Office Hours: Monday, Wednesday and Thursday 3:00 pm – 4:00 pm
Monday and Thursday 11:00 am – 12:00 pm; and by appointment

Class Time and Place:

Lecture: Monday and Wednesday 8:50 - 9:45 am, Cowley 245
Lab: Wednesday 9:55 - 11:55 am, Cowley 245

Course Description and Objectives:

The purpose of this course is to provide you with an introduction to the concepts and techniques associated with Geographic Information Systems (GIS). A Geographic Information System can be defined as any computer-based, software-hardware platform capable of capturing, storing, displaying, manipulating, and analyzing any set of geo-referenced data. In particular, the goals of this course are: 1) to understand the basic principles and concepts of GIS; 2) to obtain hands-on experience of using GIS software and establish basic skills of performing GIS operations and analysis; and 3) to appreciate some critical issues associated with GIS analysis, for example, data quality and availability. It is assumed that you have a familiarity with desktop computers (pc), the operating system of Windows, web browsing, as well as software such as MS Excel and MS Word.

Course Texts:

You are responsible for completing all the readings as listed on the course schedule and assigned in class.

Required material for lecture:
Keith C. Clarke, 2nd edition, 2003, ***Getting Started with Geographic Information Systems***. Prentice Hall

Required material for lab:
T. Ormsby, E. Napoleon, R. Burke, C. Groessl, L. Feaster, 2nd edition, 2004, ***Getting To Know ArcGIS Desktop***. ESRI Press

Additional readings and labs will be posted on D2L course site and in the class folder in the lab. I will post all the PowerPoint's on D2L after their correspondent lectures. However, be aware that there will be information that is only presented in class.

Course Web Information:

Go to https://secure.uwlax.edu/d2l/, and use your email account to login, where you will find the course site of GEOG 385 in Fall 2009. **You assume the responsibility to check**

your D2L course site on a regular basis weekly. This is vital because related course announcements and materials will also be posted online. You can find help information on the front-page of D2L or through this link: http://www.uwlax.edu/itssupport/onlinehelp/d2lstudent.htm.

Course Requirements and Evaluations:

Attendance:

Attendance is critical to your success in this class. Material will be covered in class and lab time, including lecture, readings, software demonstrations, internet material, and additional tips and instructions for the laboratory, all of which are not in the book. A total of **10** points are possible for participation and lab attendance. Points will be lost for lack of participation, missing labs or regularly leaving labs early.

Lab Assignments:

All lab exercises are to be handed in at the beginning of your lab section on the scheduled due date noted on the class schedule (see last page of the syllabus for more detail). All lab assignments upon completion will be saved in the class folder.

It is very important that you do all the lab assignments. Late submission of any assignment is strongly discouraged. Late lab assignments will be accepted only within 2 weeks of original date assigned. You will not receive full points for late assignment.

Exams:

Two exams will be given on the dates listed in the syllabus and are designed to assess your comprehension of presented materials. The two exams will consist of true/false and multiple choice questions, short essays, and analytical problems based on material from class presentations and readings. You are expected to take the exams at the scheduled time. Make-up exams will be given ONLY for exceptional circumstances, such as illness or university-approved event, and proof will be required. In cases where you have a scheduling conflict for a university-approved event, it is YOUR responsibility to notify me at least two weeks before the exam. In the case of emergencies, it is YOUR responsibility to notify me that you will be unable to attend, preferably before the exam or within 24 hours after the exam.

Grading:

Your final grade in this course will be based on the following:

Midterm Exam	100
Final Exam	100
Lab assignments	200
Final Project	50
Class participation	10
Total	460

Grade Scale:

A = 100-93%, AB = 92-88%, B = 87-83%, BC = 82-78%, C = 77-70%, D = 69-60%, F = 59% and below

Incompletes: I do not give incompletes except for medical or similar emergencies, and proof of the emergency will be required.

Uncollected Student Work: Student work that has not been collected by the student will be disposed of at the end of 4 weeks into the following semester.

Academic Misconduct: Academic misconduct is a violation of the student honor code. Academic misconduct is unacceptable. Plagiarism or cheating in any form may result in the failure of the assignment, exam, or the course, and may include harsher sanctions. Refer to the Eagle Eye for a detailed definition of academic misconduct: Refer to the Eagle Eye at http://www.uwlax.edu/StudentLife/academic_misconduct.htm#14.03 for a detailed definition of academic misconduct. For helpful information on how to avoid plagiarism, go to http://www.uwlax.edu/murphylibrary/research/plagiarism.html.

Disability accommodations: If you have a documented disability, please come and see me as early as possible in the beginning of the semester and I will make every effort to accommodate your special needs. Please note the following important information:

"Any student with a documented disability (e.g., physical, learning, psychiatric, vision, or hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and the Disability Resource Services Office (165 Murphy Library) at the beginning of the semester. Students who are currently using Disability Resource Services will have a copy of a contract that verifies they are qualified students with disabilities who have documentation on file in the Disability Resource Service Office."

Course Schedule:

The schedule outline is subject to change (with advance warning) so assume responsibility for keeping up with classroom announcements.

Week	Date	Lecture Topic	Reading (Clarke's text, unless otherwise notified)	Lab Topic	Lab Manual Reference	Lab Due
1	9/9	Introduction to course		Lab introduction		
2	9/14	GIS overview	Ch. 1			
	9/16	GIS overview	Ch. 1	Lab 1: Introduction to ArcGIS (20 points)	Ch. 3, 4	
3	9/21	GIS's roots in cartography: Map and attribute information, map projections	Ch. 2		Ch. 13	
	9/23	GIS's roots in cartography	Ch. 2	Lab 2: Map projections and coordinate systems (15 points)	Ch. 13	Lab 1 due
4	9/28	Maps as numbers	Ch. 3			

	9/30	Maps as numbers	Ch. 3	Lab 3: Displaying and classifying data (20 points)	Ch. 5, 6	Lab 2 due
5	10/5	Getting the map into the computer: GIS data input	Ch. 4			
	10/7	GIS data input	Ch. 4	Lab 4: Labeling and geocoding (25 points)	Ch. 7, 17	Lab 3 due
6	10/12	Midterm exam review				
	10/14	**Midterm exam**		No lab (work week for midterm exam)		
7	10/19	What is where? Data management models	Ch. 5			
	10/21	What is where? Database structures	Ch. 6	Lab 5: Spatial query, selection and join (30 points)	Ch. 8, 9, 10	Lab 4 due
8	10/26	Why is it there? GIS spatial analysis and operations	Ch. 6			
	10/28	Why is it there? GIS spatial analysis and operations	Ch. 6	Lab 6: Geoprocessing (35 points)		Lab 5 due
9	11/2	GIS operations	Ch. 7			
	11/4	GIS operations	Ch. 7	Lab 7: Creating final map products (30 points)		Lab 6 due
10	11/9	Making maps with GIS: GIS output	Schuurman (2004), ch. 3: The devil is in the data			
	11/11	GIS output		Lab 8: Learning the spatial analyst extension (25 points)		Lab 7 due
11	11/16	GIS output				
	11/18	Picking the right GIS	Ch. 8	Work on final project topic (10 points)		Lab 8 due
12	11/23	Picking the right GIS	Ch. 8			
	11/25	**Thanksgiving Recess**				
13	11/30	Case studies in GIS	Ch. 9			
	12/2	Case studies in GIS	Ch. 9	Work on final project (40 points)		Final project topic due
14	12/7	Present and future trends	Ch. 10			
	12/9	Ethics in GIS	Blackmore and Longhorn (2004), Ethics and GIS: The practitioner's dilemma (p. 1-11)	Work on final project		
15	12/14	Project presentations				

	12/16	Project presentations Final exam review		No lab		
16	12/18	**Final exam** **Friday, December 18,** **12:15pm - 2:15pm**				