DESCRIPTION

This course provides an introduction to digital mapping and spatial analysis using geographic information systems (GIS). Students learn how to create their own maps, and how to use GIS software to analyze geographic problems and learn techniques that can be applied to a wide variety of subject areas within geography as well as in other disciplines. The lectures discuss the underlying theory, and how it is implemented in GIS software. The lab sessions give students the opportunity to learn for themselves how to put that theory into practice, gaining hands-on experience with ESRI ArcInfo 9 software, the most popular GIS and an industry standard in many fields. A basic understanding of computers and familiarity with the Microsoft Windows operating system is assumed.

INSTRUCTOR

Mike Lackner
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Office hours: Tuesday/Thursday, 11:00am-12:00 pm
Course Website: http://individual.utoronto.ca/lackner/ggr272/GGR272F_main.html

LECTURES

Tuesday and Thursday, 10:00am-11:00am, Room 2118, Sidney Smith Hall

LABS

All labs are in Room 620, Sidney Smith Hall
Note: There are NO lab sessions in the first week.

P0101 Tue, 11:00am-1:00pm
P0301 Wed, 10:00am-12:00pm
P0401 Wed, 1:00pm-3:00pm
P0501 Thu, 1:00pm-3:00pm
P0601 Thu, 4:00pm-6:00pm
P5102 Tue, 6:00pm-8:00pm

TEXT

Lo, C.P. and Albert K.W. Yeung, 2007. Concepts and Techniques of Geographic Information Systems, 2nd ed., Pearson Education Canada, Inc., Toronto.

PREREQUISITES

There are no prerequisites for this course.

EVALUATION

Lab assignments:	35%
Midterm exam:	25%
Final exam:	40%

Late penalty: 5% of the total mark for the lab per day, up to 7 days (excluding weekends and holidays), after which assignments will not be accepted. If an assignment is handed in after the start of the lab session in which it is due, it will be penalized for that day. Requests for deadline extensions must be made within 5 business days of the deadline, and must be accompanied by an official university medical form. If an assignment has been marked and handed back to the class, no other assignments will be accepted (even if it has not been 7 days). Hand in all assignments directly to your TA. If absolutely necessary, assignments can be handed in to the Geography Office (Room 5047, Sidney Smith) during working hours. Make sure the date and time is noted by office staff as your mark can be lowered if the work gets to the TA after the deadline. You assume all risk for lost or missing material.
Academic offences: Plagiarism and other academic offences will not be tolerated. For more information, please refer to the arts and science code of behaviour on academic matters.

COURSE SCHEDULE

THEME	WEEK	DATE	TOPIC	ASSIGNED	DUE
Introduction to GIS	1	Sept 11	Course Overview and Introduction to ArcGIS	No labs sessions	
		Sept 13	Digital Representation of Geographic Data		
	2	Sept 18	Map Design in a GIS	Lab 1	
Map Design		Sept 20	Quantitative Map Types		
	3	Sept 25	Quantitative Map Types		
		Sept 27	Coordinate Systems and Map Projections		
	4	Oct 2	Map Projections	Lab 2	Lab 1
Data Input		Oct 4	Vector Data Input: Creating and Editing Data		
	5	Oct 9	Vector Data Input: Creating and Editing Data		
		Oct 11	Vector Data Models and Topology		
	6	Oct 16	Vector Data Models and Topology	Lab 3	Lab 2
Working with Data		Oct 18	Database Management Systems		
	7	Oct 23	**MIDTERM TEST**		
		Oct 25	Working with Tables (Adding and editing attribute data, adding fields, statistics, joins)		
	8	Oct 30	*Midterm Test Results*		
		Nov 1	Non-Topological Vector Analysis (Queries)		
	9	Nov 6	Preparing Data for Analysis	Lab 4	Lab 3
Overlay Analysis		Nov 8	Measuring Distance; Vector Overlay Analysis		
	10	Nov 13	Raster Analysis		
		Nov 15	Raster Analysis		
	11	Nov 20	Cartographic Modeling, Model Builder	Lab 5	Lab 4
Data Acquisition		Nov 22	Attribute Data for Thematic Mapping		
	12	Nov 27	Remote Sensing as a Data Source		
		Nov 29	Remote Sensing as a Data Source		
	13	Dec 4	Data Quality and Metadata		Lab 5
		Dec 6	Data Quality and Metadata & Course Review		
	TBA		**FINAL EXAM**		

* Labs are due at the start of your lab session during the week indicated.

Note: The instructor reserves the right to modify the schedule during the term.