Department of Geography
Program in Planning, Faculty of Arts and Science
University of Toronto
GGR 273 H1S: GIS II
Course Outline
Winter 2015

Course General Information

Course title	GIS II
Course number	GGR273H1S
Location	Room: SS 1069
Meeting days	Tuesdays
Meeting times	10:00am–12:00pm

Course Description

This course builds on GGR272H1 by providing students with practical spatial analysis methods and the underlying theory needed to understand how to approach various geographic problems using GIS software and a variety of data types and sources. GGR273 continues the examination of the major theoretical and analytical components of a GIS and spatial analysis. Some topics from GGR272 are discussed in more depth and new topics are introduced. The lectures discuss underlying theory and its implementation in GIS software. The assignments give students the opportunity to learn for themselves how to put that theory into practice, gaining more hands-on experience with ESRI ArcGIS software, the most popular GIS and an industry standard in many fields.

Instructor Information

Name	Alireza Ghaffari (Ali), Ph.D.
Email	alireza.ghaffari@utoronto.ca
Office location	TBA
Office hours	Drop by between 08.30 to 09:30am and 12:15 to 1:30pm, on Tuesdays. (Not right before class, please.) You also can make a specific appointment by e-mail.

Course website (Blackboard): http://portal.utoronto.ca (requires UTORid and password)

Textbook:

Chang, Kang-tsung, 2014. Introduction to Geographic Information Systems, 7th ed., McGraw-Hill, Toronto.

Communications Policy

Please always use your University of Toronto e-mail address (@mail.utoronto.ca) for course-related communications. Other e-mail addresses may be filtered as spam, and we do not promise to respond to them. Please read the course handouts and check the

Blackboard site before e-mailing a question, to make sure that it hasn't already been answered. For course-related queries, e-mail to Ali.

Prerequisites and Expectation

Prerequisite: GGR272H1

Assessment Scheme and Dates

Item	Weight	Date Start	Due Date
Asgmt 1: GEOCODING	*05%*	**Jan. 13**	**Jan. 20**
Asgmt 2: RS as a GIS DATA SOURCE	*10%*	**Jan. 20**	**Feb. 03**
Asgmt 3: RASTER ANALYSIS USING MODELBUILDER	*15%*	**Feb. 03**	**Mar. 03**
GIS Project	*20%*	**Mar. 03**	**Mar. 31**
Midterm Test	*20%*	**Feb. 10**	
Final Exam	*30%*	**TBD by Registrar in April Exam Period**	

GIS Assignments and the Help Desk

In order to complete the assignments, you will need access to the ArcGIS software. All students in the course will have access to computers in the GIS Lab when it is open and it is not reserved for other classes (a schedule will be posted on the door each week). The lab is located on the ground floor of Sidney Smith Hall in room 620, and it is open weekdays from 8:00 am to 10:00 pm during the regular term.

You are not required to attend scheduled tutorials or lab sessions. Instead, there will be several scheduled times each week when a teaching assistant will be available in the GIS Lab to assist you. These are informal drop-in sessions and you are welcome to attend as many as you like. We will do our best to schedule more hours during peak times, but do **keep in mind that there are a limited number of computers available in the lab and they are used on a first-come-first-served basis**. The help desk schedule will be posted on Blackboard when it is available.

You will be assigned to a specific teaching assistant based on your last name, and that TA will be marking all of your work. Please check the Contacts page on Blackboard for a list of TAs and their contact information.

Please note that the teaching assistant's role is to guide you and make suggestions but in order to learn the concepts and software, you must be prepared to try things on your own. The TAs will not give you the answers to assignment questions, as this would deny you the chance to learn for yourself. Make sure you monitor the discussion board forums, as this is often where you will get valuable tips and other help.

Assignments must be submitted through Blackboard.

For help on assignments:

- Consult the readings, video demonstrations, and podcasts (all found under Course Materials)
- ArcGIS Help 10.2
- Ask your fellow students via the Discussion Board (you are encouraged to ask and answer questions in the forum, keeping in mind that you cannot provide answers to specific assignment questions and should not post images of your maps)
- Ask your TA
- Ask the course instructor, through the Discussion Board, by e-mail, phone, in person, or through online office hours

Technical (software) support

- ArcGIS Help 10.2, ArcGIS online forums
- Ask your TA, through the Discussion Board, by e-mail (see the Contacts link on Blackboard), or through virtual office hours
- Ask your course instructor

Options for Using the GIS Software

In order to complete the assignments, you will need to use ArcGIS for Desktop (Advanced version) made by ESRI Inc. You have several options for accessing ArcGIS:

Use ArcGIS in the GIS Lab

The GIS Lab is located in Sidney Smith Hall room 620 (Level "G", one floor below street level) and is open Monday to Friday, 8:00 am to 10:00 pm. You have access to the lab during your practical sessions each week, as well as any time the lab is open and no other scheduled classes are using it (a schedule is posted on the lab door). You will have to login using a geography account (not your UTorID). Your account will be set up before the course starts. Instructions for using the GIS Lab are available on Blackboard as a PDF document.

Install ArcGIS on your own computer

PC: If you have a Windows computer, you have the option of downloading and installing a free, one-year student edition of ArcGIS on your own computer. Since all of the assignments and necessary data will be available for download from the course website, many students find using ArcGIS on their own computer to be a convenient option. You can download the software from the University of Toronto Map and Data Library. For instructions, click here and if you need installation assistance, contact gis.maps@utoronto.ca. An internet connection is not required to run ArcGIS once it is installed.

Mac: The ArcGIS software is Windows-only, but it is possible to install it on a Mac (note: you will need a licensed copy of Windows). You can download ArcGIS from the University of Toronto Map and Data Library. For instructions, click here and if you need installation assistance, contact gis.maps@utoronto.ca. For information on how to install ArcGIS on a Mac, please see this web page. An internet connection is not required to run ArcGIS once it is installed.

Run ArcGIS over the Internet

If you are unable to install ArcGIS on your own computer (or just prefer not to), you have the option of running it over the Internet. Using XenApp by Citrix, your ArcGIS session runs remotely on a server, and you interact with it using a "thin client" window that can be used on a Mac or PC with nothing to install on your computer other than the small and simple Citrix Receiver (and Windows is not required if you're using a Mac). An internet connection is required in order to use ArcGIS via Citrix. Instructions on how to get started with Citrix can be found by clicking on the GIS Software menu link in Blackboard.

You will find the course data on the N: drive in Citrix, and your student workspace (where you can save your files) is the G: drive. Remember that, in order to access any drive in ArcMap, you have to first click on the Connect Folder icon in the Catalog pane in ArcMap and select the drive. You should only have to do this once. If you are using Citrix, it is best to complete your work in ArcGIS and then use a browser inside Citrix to complete the assignment.

Use ArcGIS in Robarts Library

There are two computer labs in Robarts Library that have ArcGIS installed. The Map and Data Library (5th floor) has 20 workstations. The staff there is available to help with any problems or questions you may have with ArcGIS, and can provide general advice. Please note that they are not able to provide any specific help related to your assignments. There are another 40 computers on the 4th floor that have ArcGIS installed.

Getting Help

Learning how to use software to complete various tasks and solve geographic problems can sometimes be challenging. The ability to work independently is a valuable skill for all GIS users, and it is important that you take advantage of all available resources, including podcasts, video demonstrations, and readings in the specified ArcGIS Help sections. However, if you get stuck and are not able to find a solution from the resources provided, you are encouraged to post a question to the course discussion board. Chances are that another student or a TA has encountered a similar problem and will be able to offer advice.

Other Important Dates

A weekly list of lecture topics and reading assignments will be provided in the Course Schedule, available on the course Blackboard site. Classes for this semester end on April 2, but our last class session will be March 31, 2014. The Exam Period is from April 08 to April 30, 2014. Please don't buy any plane tickets or make irreversible plans until the Registrar has posted the schedule.

Notes and Goals for Tests and Assessments Items

Midterm Test:

The Midterm Test will cover material from the first half of the term. It will be 90-min long, with multiple choice and questions requiring written answers. It will be held during normal class time. Additional information will be posted on the course Blackboard site and discussed in class. The principal **objectives** are to test your comprehension of material presented in class and in readings, and to assess your ability to communicate this understanding in writing format in an organized manner, using appropriate terminology without aids.

Assignments:

The assignments are designed to help you see the connections between the concepts discussed in the lectures and how those concepts are implemented in the software. By the end of the course, you should be able to make informed decisions about what tools to use and how to use them, both individually to answer specific questions, and in a sequence to solve larger problems. You should also be able to communicate your results in map and text forms, and interpret and discuss the meaning of those results.

Final Exam:

The Final Exam will not be cumulative, covering just material from the second half of the term. It will be 2-hrs long, with multiple choice and questions requiring written answers. The date and location will be posted by the Registrar with the April Exam Schedule. Additional information will be posted on the course Blackboard site and discussed in class. The principal **objectives** are to test your comprehension of material presented in class and in readings, and to assess your ability to communicate understanding of the material in an organized, coherent manner in written format, utilize appropriate terminology, cite examples, apply what you have learned to both real and hypothetical disaster scenarios, and synthesize material from different parts of the course.

Course Policies

Late penalty:

A penalty of 5% of the total mark for the assignment will be applied per day, up to 7 days, after which assignments will not be marked. If an assignment is submitted after the deadline (23:59 of the due date), it will be penalized 5% for each 24-hour period it is

late up to 7 days. Submit answers to assignment questions using the Blackboard pages provided and submit any maps or other figures as JPEG files using the Blackboard assignment tool.

Technical problems:

This course requires the use of computers, and many things can go wrong when using them. You are responsible for ensuring that you maintain regular backup copies of your files, use antivirus software (if using your own computer), and schedule enough time when completing an assignment to allow for delays due to technical difficulties. Computer viruses, crashed hard drives, broken printers, lost or corrupted files, incompatible file formats, and similar mishaps are common issues when using technology, and are not acceptable grounds for a deadline extension.

In case of missed deadlines or test:

Requests for assignment deadline extensions or missed term test, the instructor within 5 business days of the missed deadline or test. Students must be provide an original copy of the official university illness verification form. Medical forms are accepted at the discretion of the instructor, and must clearly indicate that you were incapacitated for the date of a test or for several days in the case of an assignment (being ill immediately prior to the deadline for a two-or three-week assignment is not sufficient grounds for a deadline extension). In case on non-medical emergencies, please consult your college registrar.

Inquiries about graded term work:

Any inquiries must be made within one month of the return date of the work. This is in accordance with Arts and Science rules as stated in the calendar. Please contact the person that did the marking first. If, after discussing the issue with the marker, you are still not satisfied with the explanation for your mark, you should then contact the instructor.

Accessibility needs:

The University of Toronto and the course instructor are committed to accessibility. If you require accommodations or have any accessibility concerns, please visit the Accessibility Services website as soon as possible.

Academic offences:

Plagiarism and other academic offences including impersonating another student or providing false or altered medical forms, death certificates, or similar documents will not be tolerated. For more information, please refer to the Arts and Science Code of Behaviour on Academic Matters.

Other Student Support Resources:

The university provides a range of student support related to student life and academic success. Learner supports include

services related to University Life, Library, Academic skills support, IT support and more. See Learner Support Available at the University of Toronto.

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Re-cap on TENTATIVE SCHEDULE – Winter 2015

Lecture			Assignment	
Week/Date	**Title**	**Reading***	**Title**	**Due Date/Time****
I/ Jan. 06	Course Introduction	---------	**No Lab**	
II/ Jan. 13	Geocoding and Dynamic Segmentation	Ch. 16	GEOCODING	---------------
III/ Jan. 20	Remote Sensing	Ch. 13, 14	RS as a GIS DATA SOURCE	**Asgmt 1 Jan. 20**
IV/ Jan. 27	Remote Sensing (cont.)	Ch. 13, 14	RS as a GIS DATA SOURCE	--------------
V/ Feb. 03	Remote Sensing (cont.)	Ch. 13, 14	RASTER ANALYSIS USING MODELBUILDER	**Asgmt 2 Feb. 03**
VI/ Feb. 10	***Midterm Test*** *(90 minutes)*		RASTER ANALYSIS USING MODELBUILDER	-------------
Reading Week: February 16–20, 2015				
VII/ Feb. 24	Raster Data Analysis	Ch. 12, 13, 14	RASTER ANALYSIS USING MODELBUILDER	-------------
VIII/ Mar. 03	Raster Data Analysis (cont.)	Ch. 12, 13, 14	Start to set up GIS Project	**Asgmt 3 Mar. 03**
IX/ Mar. 10	Raster Data Analysis (cont.)	Ch. 12, 13, 14	Define your own GIS project to cover: • Study objective(s) • Data acquisition and preparation • Methodology • Data/spatial analysis/modelling • Map(s) preparation and presentation More detail and instruction will be given during the course	
X/ Mar. 17	Geoprocessing	Ch. 11, 15, 18		
XI/ Mar. 24	Geoprocessing (cont.)	Ch. 11, 15, 18		
XII/ Mar. 31	Course Review	---------	***Due Date to Submit the Project***	
Apr. 08 - Apr. 30, 2015, Examinations				

*To cover the course the reading material will be from the selected sections of textbook as well as slides

** Assignments must be submitted through Blackboard by midnight of due date.