GGR272: Geographic Information and Mapping I

Course Description

This online course is an introduction to digital mapping and spatial analysis using a geographic information system (GIS). You will learn how to create your own maps and how to use a GIS to analyze geographic problems using methods that can be applied to a wide variety of subject areas within geography and in other disciplines. Over the term, you will have opportunities to find and work with data sets that relate to your own interests through a series of practical assignments. These assignments provide an opportunity for you to learn how to use the software, gaining hands-on experience with ArcGIS from Esri Inc., the most popular GIS software and an industry standard in many fields.

Online course format: There is no scheduled lecture time. The course is designed to be flexible and personalized, so that you can learn when it works best for you, and you can connect your own interests to the concepts and methods covered. The course is structured around two-week modules and related activities. On Friday mornings specified in the course schedule (see the last page), all the new material required for a module will be made available, including lecture and software videos. Over the following two weeks, you are expected to watch the relevant videos, read all related readings, complete the quiz and assignment for that module, and participate in discussions on the discussion board as needed. All of the necessary material for each module is clearly organized and available on the course website.

Communication: In this course, you have the option to gain experience with a variety of communication tools including webinars, videoconferencing, screen sharing, discussion boards, and chat windows. Think of this as another aspect of your learning and take the opportunity to learn how to use them effectively.

Please keep in mind: Many of the concepts and skills learned in this course are cumulative. This course provides great flexibility as to when you work on it, but it is essential that you manage your time well. If you find you are falling behind, ask for help from your TA or instructor as soon as possible. You may find this link helpful in deciding if this course is a good fit for you: Is taking an online course right for me?

Online discussion: There is a lot to learn in this course, and you will find that interacting with other students, the TAs, and the instructor will make your learning experience more efficient and enjoyable. You are strongly encouraged to ask and answer questions on the discussion board. You can set notifications so that you are notified when there is a new post, to save you having to check it all the time. You will not be evaluated based on your level of participation, but it will likely help you with the other aspects of the course in which you *are* being evaluated.

Textbook: There is no required textbook. Links to online readings will be provided by the instructor.

Prerequisite: There is no prerequisite. A basic familiarity with computers and the Microsoft Windows operating system is assumed. A general understanding of geography is helpful, but no prior geography courses are required.

Software: The course uses ArcGIS software from Esri Inc., the most popular GIS software and an industry standard in many fields.
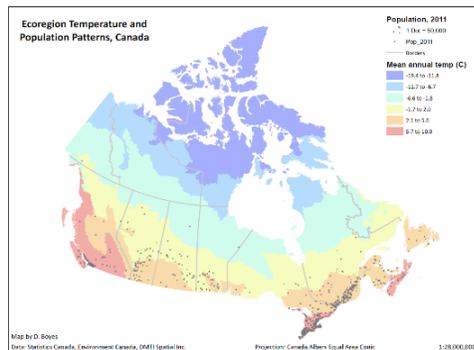
Course website: http://portal.utoronto.ca. This term, we will be among the first courses in the university to use Canvas, the new learning management system that is replacing Blackboard. You should be able to connect to Canvas using the usual portal. More information will be provided on or just before the start of the course.

Evaluation

Assignments: 50%

The assignments are designed to help you see connections between the theory discussed in the lectures, how those concepts are used in the software, and how both relate to your own interests. By the end of the course, you should be able to make informed decisions about finding, evaluating, managing, and analyzing geospatial data to answer geographic questions. You should also be able to communicate your results as maps, and interpret and discuss their meaning. You will have opportunities to find and explore map data sets on topics of your choosing, and these data sets may be integrated into your assignments.

The time required to complete the assignments varies, depending on the person. You will be learning practical skills in mapping and problem solving using complex software, which will require a substantial amount of time each week. Assignments (including maps and figures) are completed in Canvas. Printed or e-mailed submissions are not accepted.

Marking: You will be assigned to a teaching assistant based on your last name, and that TA will be marking all of your work. Please check the Contacts page on Canvas for a list of TAs and whose assignments they are marking.

Quizzes: 10%

There is one quiz for each of the five course modules on Canvas. The quizzes are designed to help you stay on track. You can complete each quiz any time before it is due, but each one can only be completed twice and there is a time limit. The quizzes are each worth 2.5% of your final mark, but the lowest quiz mark will not be counted.

Final exam: 40%

Students will be responsible for all course material for the entire term. The exam format will be multiple choice and short answer questions. The questions asked in the lecture videos, quizzes, and assignments are all useful examples of the types of questions you may see on the exam.

Off-site exams: Final examinations are normally written in person on the St. George campus. If you require off-site proctoring and are eligible, please notify your Faculty registrar and submit your request **no later than twelve (12) business days after the start of term**. If requested on time, the Arts and Science Registrar will endeavour to provide arrangements for proctored exam writing for students residing more than 125 km travel distance from the campus at a proposed outside examination centre. You must provide the contact information of an institution in your area offering proctoring services. However, please note that the requested location is not guaranteed and an alternative test centre may be identified. Students are responsible for any fees charged by the test centre. Please contact the Faculty Registrar's Office for further details: Bev Lewis bev.lewis@utoronto.ca or Erin McMichael erin.mcmichael@utoronto.ca. For more information, see FAQs for Off-Site Exams

Instructor

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Office hours

In person: open-door policy; drop by or make an appointment. Sidney Smith Hall room 5011.

Online: please e-mail me to set up a time. We use Adobe Connect web conferencing software (the URL will be available on Canvas) so I can show PowerPoint slides, do live demonstrations, and meet with students individually or in groups (you can ask questions using a chat window, microphone, or webcam).

Options for Using the GIS Software

There are several options for accessing ArcGIS for Desktop (Advanced version) made by ESRI Inc., which you will need to complete the course work. Please note that you are responsible for ensuring that you have access to ArcGIS using one of these methods. If you run into problems, check the FAQ page on the discussion board and, if needed, post a question so that we can resolve the problem as quickly as possible.

Install ArcGIS on your own computer

PC: You can download a free, one-year student edition of ArcGIS from the Map and Data Library here. Since all of the assignments and data are available on Canvas, many students find this to be a convenient option. If you need installation assistance, contact gis.maps@utoronto.ca. ArcGIS only runs on Windows. An internet connection is not required once ArcGIS is installed.

Mac: ArcGIS is Windows-only but can be installed on a Mac using Boot Camp, a free utility that comes with OS X and later (but you will need a valid copy of Windows). Click here for installation instructions.

Run ArcGIS over the Internet

PC or Mac: You can run ArcGIS over the internet without installing anything on your Mac or PC except a small app called Citrix Receiver. Instructions are available on the GIS Software page in Canvas.

Warning: Using Citrix may become slow if there is heavy demand on the server, such as the night before an assignment deadline. This is not grounds for an extension, so please plan accordingly.

Use ArcGIS in Robarts Library

The Map and Data Library (fifth floor) has 20 workstations with ArcGIS and there are another 40 computers on the fourth floor. The staff there are available to help with any problems or technical questions you may have with ArcGIS, but are not able to provide specific help with assignments.

Getting Help

Course material: Learning new GIS concepts, and how they are implemented in the software to complete various tasks, 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 the course material available on Canvas, including lecture and software videos, readings and other resources.

Discussion board: If you've gone through all of the course material and are still stuck, then post a question to the discussion board. Chances are that another student, a TA, or the instructor has encountered a similar problem and will be able to offer advice. Students can sometimes feel isolated and that they have no one to talk to about the course. Don't let this happen! If you participate in conversations online, you'll have a much easier time understanding the material, keeping up, and you will likely find the course more enjoyable. Using the discussion board also allows other students to benefit from the discussion and dramatically improves efficiency in communication. E-mail to your TA or the instructor should only be used for personal questions, such as requests for deadline extensions due to illness.

Help Desk: You are not required to attend scheduled tutorials or lab sessions. Instead, there will be scheduled "help desk" times each week when a teaching assistant will be available to assist you online. These are informal drop-in sessions and you are welcome to attend as many as you like. The help desk schedule and URL will be posted on the course website when it is available. If you are not able to attend, or would like a one-on-one session with your TA, then just contact them to set up a time.

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, as this is often where you will get valuable tips and other help.

ArcGIS Help: Esri provides extensive documentation for its software that provides technical information, but there also many sections with explanations similar to what you would find in a textbook. Numerous links to these help pages are available on Canvas, but you are encouraged to consult this website yourself as well.

GeoNet: This is a group of ArcGIS forums run by Esri. You are not required to consult GeoNet for this course, but it can be a useful place to look if you're getting an error message, or want to participate in technical discussions. You can access it here: https://geonet.esri.com.

Learner support available at the University of Toronto: The university provides a range of student support related to student life and academic success, including services related to university life, library and academic skills support, IT support and more. See Learner Support Available at the University of Toronto.

Course Policies

Late penalty: A penalty of 5% of the total mark for the assignment will be applied per day, up to 7 days (including weekends and holidays), after which assignments will not be marked. Penalties are calculated for each 24-hour period after the deadline. If an assignment has been handed back, no other assignments will be accepted, even if it has not been 7 days.

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 to allow for delays due to technical difficulties. Computer viruses, crashed hard drives, lost or corrupted files, incompatible file formats, etc. are common issues when using technology, and are not acceptable grounds for a deadline extension.

In case of illness: Requests for deadline extensions must be made to the instructor within five business days after the deadline, and must be accompanied by an original copy of the official university medical 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 right before the deadline for a two-week assignment is not sufficient grounds for a deadline extension).

Inquiries about graded term work: Any inquiries about marking must be made within two weeks 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. You will be assigned to a teaching assistant based on your last name, and that TA will be marking all of your work. Please check the Contacts page on Canvas for a list of TAs and which names they are marking.

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.

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 Code of Behaviour on Academic Matters.

Use of class materials and copyright notice: The materials used in this class including, but not limited to lecture notes, video recordings, exams, quizzes, and assignments are copyright protected works. If a student wishes to photograph, record audio and/or video, or otherwise reproduce lecture presentations, course notes or other similar materials provided by the instructor, he or she must obtain the instructor's written consent beforehand. Otherwise, all such reproduction is an infringement of copyright and is absolutely prohibited. In the case of private use by students with disabilities, the instructor's consent will not be unreasonably withheld.

Course Schedule

WEEK	DAY	DATE	TOPIC	STARTS	DUE[1]	
1	Friday	Jan. 5	INTRODUCTION TO ARCGIS	LAB 1		MODULE 1
2	Friday	Jan. 12				MODULE 1
3	Monday	Jan. 15			QUIZ 2.5%	MODULE 1
3	Friday	Jan. 19	MAP DESIGN	LAB 2	LAB 1 5%	MODULE 1
4	Friday	Jan. 26				MODULE 2
5	Monday	Jan. 30			QUIZ 2.5%	MODULE 2
5	Friday	Feb. 2	COORDINATE SYSTEMS & MAP PROJECTIONS	LAB 3	LAB 2 5%	MODULE 2
6	Friday	Feb. 9				MODULE 3
7	Monday	Feb. 12			QUIZ 2.5%	MODULE 3
7	Friday	Feb. 16	MAPPING QUANTITATIVE DATA	LAB 4	LAB 3 10%	MODULE 3
*	Friday	Feb. 23	Reading week (no help desk sessions)			MODULE 3
8	Friday	March 2				MODULE 4
9	Monday	March 5			QUIZ 2.5%	MODULE 4
9	Friday	March 9	DATA PREPARATION AND VECTOR ANALYSIS	LAB 5	LAB 4 15%	MODULE 4
10	Friday	March 16				MODULE 5
11	Monday	March 19			QUIZ 2.5%	MODULE 5
11	Friday	March 23	COURSE REVIEW		LAB 5 15%	MODULE 5
12	Friday	March 30	Good Friday (holiday)			

[1] **Assignments and quizzes are due at 5:00 pm on the dates indicated.**

Please keep in mind that the instructor keeps regular business hours. Emails/posts received outside of these hours will usually be replied to the next business day. The instructor reserves the right to modify the topics and schedule during the term.