GIS for Public Health (GGR300H1F)
Fall Semester 2015
University of Toronto
Lecture: Thursdays 10a-12p – Location: SS 2105
Labs: Thursdays: 12p and 1p – Location: SS 620

Professor:
Dr. Michael J. Widener
Office: 5037 Sidney Smith Hall
Office Hours: Mondays, 9-10am, Tuesday 1-3pm, or by appointment
Email: michael.widener@utoronto.ca

Required Materials:
- Cromley, Ellen K., and Sara McLafferty. *GIS and public health*. Guilford Press, 2012.
- Kurland, Kristen S., and Wilpen L. Gorr. *GIS Tutorial for Health Fifth Edition*, esri Press, 2015.

Course description:
The goal of this course is to leave students with appreciation of the power of Geographic Information Systems (GIS) to explore and analyze spatial health and medical data. The course will focus on organizing health data in a GIS, clustering detection methods, and basic spatial statistics. Other topics like agent-based models and visualization techniques will be touched upon. Lab work will provide hands on experience with example data, leaving students with a firm grasp of contemporary health and medical problems and a skill set of spatial analytical methods that can be used to solve them.

Learning Outcomes:
Given the completion of the course requirements, students will be able to:
1) understand the scope of medical and health geography and how the discipline relates to the fields of medicine, public health, and environmental health;
2) implement a variety of common statistical and computational methods used to understand the geography of health; and
3) produce high quality, professional maps that communicate a variety of health and medical topics.

Prerequisite:
Students must have taken GGR272 Geographic Information and Mapping.

Analytical methods (GGR270) or another basic statistics/mathematics course is helpful, but not required. If you find any of the simple math (there's not much but there is some) presented in this course is difficult, please consider visiting the Math Help Centre.

Grading:
Lab Assignments (50%)
- The first eight assignments are worth 5% of your final grade, while the last assignment (Chapter 10 case study) is worth 10%.

Lecture Assignments (5%)
Midterm Test (15%)
Final Exam (30%)

Lecture and Lab Organization:
This course will have a two hour lecture every Thursday at 10am, and a one hour lab period (either at 12pm or 1pm). During the lecture I will present information on a variety of GIS and health geography topics, as well as discuss the assigned readings and relevant current health events.

You are also required to sign up for a lab hour, where you will complete GIS tutorials and assignments. These tutorials and assignments specifically focus on acquiring, editing, visualizing, and analyzing spatial health data.

It is important to note that the tutorials from the book are not turned in, but are required as you will be unable to do the lab assignments without their completion. **Lab assignments must be submitted via portal.utoronto.ca (blackboard) approximately one week after their assigned date, prior to lecture**.

For example, you will be assigned Tutorial 1 and Assignment 1-1 on Thursday September 24. Assignment 1-1 must be uploaded and submitted to Portal before 10:10am on Thursday October 1. The one exception to this rule is for the due date of the case study assigned in Week 11. This will be due December 8th by midnight on portal.

Outline of Course (adjustments may be made to ensure all material is covered):

Week Number	Class Date	Lecture Topic/Readings (Chapters from 'GIS and Public Health')	Lab Topic (Tutorials from Book)	Lab Assignment
Week 1	September 17	Overview of Course and Medical/Health Geography *(Intro Chapter)*	*None*	
Week 2	September 24	GIS and Spatial Data *(Chapters 1-2)*	T1-1 to T1-6	Assignment 1-1, 1-2
Week 3	October 1	Spatial Databases for Public Health *(Chapter 3)*	T2-1 to T2-10	Assignments 2-1, 2-2
Week 4	October 8	Mapping Health Information *(Chapter 4)*	T3-1 to T3-8	Assignments 3-1, 3-2
Week 5	October 15	Detecting Clusters of Health Events *(Chapter 5)*	T5-1 to T5-8	Assignments 5-1, 5-2
Week 6	October 22	Environmental Hazards *(Chapter 6)*	GeoDa Tutorial and Assignment (completed in lab)	
Week 7	October 29	**Midterm**	*None*	
Week 8	November 5	Disease Diffusion *(Chapter 7-8)*	T6-1 to T6-6	Assignments 6-1, 6-2
Week 9	November 12	Access to Health Services I *(Chapter 9)*	T8-1 to T8-2	Assignment 8-2
Week 10	November 19	Access to Health Services II *(Chapter 10)*	T9-1 to T9-5	Assignments 9-1, 9-2
Week 11	November 26	Health Disparities *(Chapter 11)*	Chapter 10 Case Study: Studying food-borne disease outbreaks	
Week 12	December 3	Public Participation GIS and Health *(Chapter 12)*		
Exam Period	TBA	**Final Exam**	*None*	

Reading and Lecture Assignment Schedule:
All chapters from "GIS and Public Health" should be read prior to class.

Occasionally, low-stakes writing assignments will be handed out in class – i.e. "lecture assignments". Some of these will be handed in after their completion in class, while others are to be handed in at the beginning of the next class. I will be clear about these deadlines in class. Generally, these assignments will consist of worksheets reviewing a concept covered in lecture (e.g. a simple cluster detection method) or a short 250-500 word discussion write-up on an extra assigned reading.

Late assignments:
Every day an assignment is late, it will be docked 5% per day. After 7 days, the assignment will no longer be accepted and the student will receive a 0%.

Students who miss an assignment but produce one of the following documents will be allowed to hand in their work late with no penalty:
- **UofT Verification of Illness or Injury Form**: This form, available to students online, is restricted to a select group of medical practitioners and provides responses to the relevant questions about the absence.
- **Student Health or Disability Related Certificate**: A streamlined variant of the UofT Verification of Illness or Injury Form provided by our own internal doctors who can vouch for health problems without so many details.
- **A College Registrar's Letter**: This is a letter that only senior College Registrarial staff are authorized to write. It should identify itself as a "College Registrar's Letter."
- **Accessibility Services Letter**: This sort of letter may address needed accommodations or document on-going disability issues that have made absence or lateness unavoidable.

Make up quizzes, tests, or exams will not be given, unless a student produces any of the above documentation.

For more on late and missed work, please refer to the academic handbook:
http://www.artsci.utoronto.ca/faculty-staff/teacher-info/academic-handbook-for-instructors

General student issues:
If students have any questions or issues not covered in the syllabus, they are expected to email the professor or speak with him after class or during office hours. Remember to utilize your professor's office hours if you're having trouble!

Accessibility Needs:
The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: disability.services@utoronto.ca or http://studentlife.utoronto.ca/accessibility

Academic Integrity:
All work turned in by students must be their own. Do not cheat or plagiarize. The Department and University treat all cases of cheating and plagiarism as serious offenses and sanctions are severe. You should be familiar with the university's Code of Behaviour on Academic Matters:

http://www.governingcouncil.utoronto.ca/policies/behaveac.htm.

Note also that using information directly from sources such as books, articles, videos, the Internet or work of fellow students without proper citation is considered plagiarism. Quotation marks are required when using someone else's words. Changing a few words in a sentence is not enough to make it your own.

Please refer to this U of T document for more information about plagiarism: "How not to plagiarize"(http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize).