

GEOG 483: The Geoweb and Location-Based Services

Winter 2020

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Course meeting time: 11:30-2:20, Tuesday, RCH 205

Course Outline: In recent years, a flood of place-based information has been contributed online by individuals. Though many GIS packages have long had mobile components, the widespread availability of GPS-enabled mobile computing devices has led to dramatic changes in the ways that we interact with location information. As adoption of these devices increases, we are approaching an era where potentially every individual, building, and object will be broadcasting its location online. **Prerequisites: GEOG 381 or permission of instructor**

Course aims and objectives: This course takes a critical approach to understanding the development, implementation, and evaluation of the Geoweb and location-based services (LBS). These technologies are placed within broader societal concerns, including privacy, the nature of digital participation, and digital divides. Students will gain a high-level knowledge of the history, development, and current state of the Geoweb and LBS, from a GIScience perspective. This course is directed at students with some background in GIScience, who have ideally taken an undergraduate course in GIS. Knowledge of a computer programming or web development language (HTML, Javascript, Python) is an asset, but not required.

Course assessment will be focused on three areas:

- 1) Hands-on assignments using various Geoweb and LBS tools
- 2) Critical reflection and response to weekly readings (academic and popular)
- 3) Individual development of a workshop and tutorial on a Geoweb/LBS/Mapping tool.

Assessment

Assignment #1 – OSM + Geoweb	10%
Assignment #2 – Google Colab	10%
Assignment #3 – Geofencing and LBS	10%
Reading responses (4/5 x 5%ea.)	20%
Tutorial check-in	10%
Tutorial materials and delivery	30%
Tutorial evaluation by class	10%

Course schedule and outline of lecture topics*

Week #	Topic	Readings (TBA)	Assignment
Week #1 Jan 7	L01: Course Outline, Expectations, Introduction to the Geoweb and LBS L02: Open Base Mapping - All about osm and citizen science/vgi		Assignment #1: OSM + Geoweb
Week #2 Jan 14	L03: Foundational concepts: PPGIS, PGIS, and critical GIS		Reading response 1
Week #3 Jan 21	L04: Open Data L05: Collaboration		Assignment #2: Google Colab

Week #	Topic	Readings (TBA)	Assignment
Week #4 Jan 28	L06: The Geoweb – social issues		Reading response 2
Week #5 Feb 4	L07: Location Based Services: principles and design		Assignment #3: Geofencing and LBS
Week #6 Feb 11	L08 – Designing the Geoweb – tools and techniques		Reading response 3 Tutorial check-in
Week #7 Feb 18	Reading Week, No Classes		
Week #8 Feb 25	L09: Net localities: how mobile technologies are reshaping society		Reading response 4
Week #9 Mar 2	L10: Artificial Intelligence and the Smart City		
Week #10 Mar 9	L11: Graduate student presentations		Reading response 5
Week #11 Mar 16	Tutorial presentations		
Week #12 Mar 23	Tutorial presentations		
Week #13 Mar 30	Tutorial presentations		Final tutorial materials due

*** The instructor reserves the right to alter this schedule**

*****EXTREMELY IMPORTANT INFORMATION***PLEASE READ THIS*****

Accommodations and Access: I want this class to be open and accessible to everyone, and to be a safe, welcoming, and collegial environment. So, please feel free to sit where you like, eat snacks, use a laptop, and come and go from the classroom when you need to, so long as none of these activities disturb the learning experience of other students. I recognize that classroom learning can be challenging, and I will try and reduce barriers to access in general and also work to meet any specific accommodation needs you may have. You can approach me directly, after class, in my office hours, or via email to discuss any accommodation. Some specific accommodations, such as note taking, extended test writing times, learning technology support, and other can be arranged at the AccessAbility office (located in Needles Hall, Room 1401, (<https://uwaterloo.ca/disability-services/>)). Please register with this office at the beginning of each academic term.

Mental Health: Pretty much every student has or will face some type of mental health challenge in their time at university. There are many types of physical and emotional challenges that can make it difficult to do your best work and enjoy your studies. **You are not alone, and help is available from many different places.** If you

need help, go immediately to the place you feel most comfortable; your residence don, your friends, your professors (including me!), or to Counselling Services <http://www.uwaterloo.ca/counselling-services>, located on the 2nd floor of the new Needles Hall expansion. Counselling Services is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more. Above all, seek help – these are challenges that you do not need to face alone.

Academic Integrity Policies

Lateness: Please understand that all assignments and projects are to be completed on time. Late submissions will not be accepted without a valid doctor's note.

Illness: Please see the University of Waterloo policy on doctor's notes (<https://uwaterloo.ca/campus-wellness/sites/ca.campus-wellness/files/uploads/files/VIF-online.pdf>)

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check www.uwaterloo.ca/academicintegrity/.]

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity [check www.uwaterloo.ca/academicintegrity/] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Within ENV, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties which may include a grade of 0 on affected course elements, 0 on the course, suspension, and expulsion.

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.