

GEOG 475: The Geoweb and Location-Based Services

Winter 2017

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Course meeting time: 11:30-2:20, Monday, EV1 132

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 (cellphones, smartphones, tablets) 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) is an asset, but not required.

This course will mix lecture-style delivery of content with structured group discussions of academic papers and practical examples. To enhance the learning experience, students will complete a series of laboratory assignments, each designed to support the development of technical skills.

Students will also have the opportunity to explore an in-depth component of the Geoweb or LBS with a group project. Students can choose both technical software development or more theoretical GIScience-related issues (human-computer interaction, for example). This provides an opportunity for students across the technical skill spectrum.

Assessment

Assignments	40%
Literature Synthesis	15%
Group Project	35%
Participation in Class	10%

Course schedule and outline of lecture topics*

Week #	Topic
Week #1 January 6 th Theory	L01: Course Outline, Introduction to the Geoweb and LBS <ul style="list-style-type: none">- What is GIScience?- Critical Cartography- Brief history of GIS and Geoweb- Sketch mapping- How this class will work

Week #	Topic
Week #2 January 13 th Applied	L02: Open Base Mapping - All about OSM and citizen science/vgi
Week #3 January 20 th Theory	L03: Who is excluded? PPGIS, PGIS, and critical GIS.
Week #4 January 27 th Applied	L04: Open Data L05: "Big data": Accessing and analyzing the flood of information
Week #5 February 3 rd Theory	L06: Mobile data collection: current methods, techniques, and challenges L07: Net localities: how mobile technologies are reshaping society Privacy, data ownership, and networked community
Week #6 February 10 th Applied	Project proposals Visualizing data Web cartography UX
Week #7 February 17 th	Reading Week
Week #8 February 24 th Applied	L08: Location Based Services: principles and design L09: Project and process. Summary, conclusions, future directions
Week #9 March 3 rd Theory	UG project 5 minute pitch
Week #10 March 10 th	Grad Student Presentations
Week #11 March 17 th	Grad Student Presentations
Week #12 March 24 th	Grad Student Presentations
Week #13 March 31 st	Project presentations

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

Reading list

Boyd, D., & Crawford, K. (2011). Six provocations for big data. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1926431)

Crampton, J. W., Graham, M., Poorthuis, A., Shelton, T., Stephens, M., Wilson, M. W., & Zook, M. (2013). Beyond the geotag: situating “big data” and leveraging the potential of the geoweb. *Cartography and Geographic Information Science*, 40(2), 130–139. doi:10.1080/15230406.2013.777137

Evans-Cowley, J. (2010). Planning in the Real-Time City: The Future of Mobile Technology. *Journal of Planning Literature*, 25, 136.

Goodchild, M. (2007). Citizens as sensors: the world of volunteered geography. *GeoJournal*, 69(4), 211–221.

Haklay, Mordechai. (2010). How good is volunteered geographical information? A comparative study of OpenStreetMap and Ordnance Survey datasets. *ENVIRONMENT AND PLANNING B PLANNING AND DESIGN*, 37(4), 682–703. doi:10.1068/b35097

Haklay, Muki. (2012). Citizen Science and Volunteered Geographic Information: Overview and Typology of Participation. In *Crowdsourcing geographic knowledge* (pp. 105–122). Dordrecht: Springer Netherlands. doi:10.1007/978-94-007-4587-2_7

Keller, S. A., Koonin, S. E., & Shipp, S. (2012). Big data and city living - what can it do for us? *Significance*, 9(4), 4–7.

Longo, J. (2011). #Opendata: Digital-Era Governance Thoroughbred or New Public Management Trojan Horse? *Public Policy & Governance Review*.

Thatcher, J. (2013). Avoiding the Ghetto through hope and fear: an analysis of immanent technology using ideal types. *GeoJournal*. doi:10.1007/s10708-013-9491-0

<http://quod.lib.umich.edu/p/passages/4761530.0003.008/--deconstructing-the-map?rgn=main;view=fulltext>

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.

Academic Integrity Policies: 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/ for more.]

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.

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.