

GEOG 475: The Geoweb and Location-Based Services

Winter 2013

Dr. Peter Johnson (peter.johnson@uwaterloo.ca)

Course meeting time: 1:30-4:30, Mondays, EV3 4412

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 four laboratory assignments, each designed to support the development of technical skills. These assignments include:

- 1) Developing a basic Geoweb site
- 2) Critique of an existing Geoweb or LBS implementation based on criteria discussed in lectures
- 3) Accessing and working with location-based data (Twitter scraping)
- 4) Extending an existing LBS application using available free software

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

Item	Value
Assignment #1	10%
Assignment #2	15%
Assignment #3	20%
Assignment #4	20%
Group project proposal	5%
Group project presentation	5%
Group project writeup	25%
Total	100%

Course schedule and outline of lecture topics*

Week #	Topic	Readings	Assignment
Week #1 January 7th	Course Outline Introduction to the Geoweb and Location Based Services	Haklay, Singleton, Parker (2008)	Assignment #1: Developing a Geoweb site
Week #2 January 14th	What is critical GIScience? An introduction to the process of critique Applications of the Geoweb and LBS: Historical evolution and current trends	Crampton (2011) Miller (2006)	Assignment #1 Due Assignment #2: Critique of an existing Geoweb or LBS application.
Week #3 January 21st	Net localities: how mobile technologies are reshaping society Privacy, data ownership, and networked community	Gordon and de Souza e Silva (2011) Turkle (2010)	Assignment #2 Due
Week #4 January 28th	Web 2.0, Citizen Sensors and Volunteered Geographic Information Project proposal discussion	Goodchild (2007)	Assignment #2 Due Assignment #3: Accessing and working with location- based data
Week #5 February 4th	"Big data": Accessing and analyzing the flood of information	Anderson (2008)	Assignment #3 due Project Proposal due
Week #6 February 11th	Location Based Services: principles and design		Assignment #4: Extending an LBS
Week #7 February 18th	Reading Week		
Week #8 February 25th	Mobile data collection: current methods, techniques, and challenges		Assignment #4 Due
Week #9 March 4th	Review and project consultation		
Week #10 March 11th	Project consultation and work session		
Week #11 March 18th	Project consultation and work session		
Week #12 March 25th	Project consultation and work session		
Week #13 April 1st	Project presentations		Project due

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

Academic Integrity Policies

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/ 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.