

GEO281 Syllabus Web-based GIS

Course Details:

Session: Fall 2017
Classroom: Fillmore 170
Lecture Times: Mon/Wed 5:00 – 6:20 pm

Instructor: Xin Tao (xintao@buffalo.edu)
Office: Wilkeson 131
Office hours: Monday 3:00 – 4:00 pm & by appointment

Teaching assistant: Misa Yasumiishi (misayasu@buffalo.edu)
Office: Wilkeson 126A
Office hours: Monday 4:00 – 5:00 pm & by appointment

Course Objectives: The objective of this course is to introduce web mapping and geospatial technologies used in Geography. We will address key concepts in Geography and Tools/Methods on Web mapping.

Course Outline:

Introduction to web mapping	approx 1 week
Key concepts from geography	approx 2 weeks
Global Positioning System (GPS)	approx 2 weeks
Spatial data collection	approx 1 week
Data types in GIS	approx 2 weeks
Exam I	0.5 week
Spatial analysis	approx 1 week
Map design	approx 1 week
Web design	approx 1 week
Geospatial Mashup	approx 2 weeks
Web mapping	approx 1 week
Exam II	0.5 week

Reading: Text book is available as EBook (on hold via UB Course Reserve service). The hard copy of the text book should be available at UB Book store.

- Peterson, Michael P. Mapping in the Cloud. Guilford Publications, 2014.
- Fu, Pinde, and Jiulin Sun. Web GIS: principles and applications. Esri Press, 2010.

Journal articles can be downloaded from UBLibrary

- Parenteau, Marie-Pierre, and Michael C. Sawada. "The modifiable areal unit problem (MAUP) in the relationship between exposure to NO2 and

respiratory health." International Journal of Health Geographics 10.1 (2011): 1.

- Wesolowski, Amy, et al. "Quantifying the impact of human mobility on malaria." Science 338.6104 (2012): 267-270.

Grading:

- Homework: Three homework (at each 10 % of the total grade) will be announced on the class and the due date will be announced over the semester.

Grade Policy:

- Exams:

	% of total grade	Due date
Homeworks	30% (10% × 3 HWK)	TBD
Exams	70% (35% × 2 Exams)	10/16 (Exam I), 12/6 (Exam II)

- No Make-up tests for missed exam.
- No exam will be given if any single student in the room has left after they finish (in case you're too late).

- Late Policy: assignments must be submitted in print or electronic version on the specific due date to the instructor in class. Late work will lose 10 percent per day.

Letter Grade Distribution:

>= 93.00	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	63.00 - 66.99	D
80.00 - 82.99	B-	60.00 - 62.99	D
77.00 - 79.99	C+	<= 59.99	F

Academic Honesty: As a student at University of Buffalo, you have agreed to abide by the University's academic honesty policy, the Student Code of Conduct. All academic work must meet the standards described in the Student Code of Conduct found at: <http://www.student-affairs.buffalo.edu/judicial/rulereg.php>. Particularly, **excessive copying or quoting other work verbatim**, even if you provide a citation, is **not acceptable**. Any verbatim use of other written work will result in a substantially lower grade than if you synthesize ideas in your own words. For essays and bibliographies, the primary sources of material must be refereed journal articles. Web sites must not be the primary sources of material, but can be included as supplemental sources provided they are properly cited. Note that refereed journal articles published electronically and downloaded from publishers web sites

are acceptable. Further guidelines on written work will be provided with the respective assignments. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

Class Attendance Policy: <http://undergrad-catalog.buffalo.edu/policies/course/attendance.html>: Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn from a class at the discretion of the professor.

Course schedule

The weekly coverage is subject to change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Week	Date	Topics	Readings	Assignments
1	8/28 8/30	Introduction to Web GIS Overview of online GIS	Chap 2 & Chap 4	HWK #1
2	9/4 9/6	No Class (Labor Day) Map scale	Chap 7	
3	9/11 9/13	Map abstraction Coordinate system	Chap 7 Chap 5	
4	9/18 9/20	Map projection Location and GPS	Chap 5 Chap 9	
5	9/25 9/27	Space and place Spatial data collection	Chap 9 Chap 2	HWK #2
6	10/2 10/4	Maps from web Understanding spatial data types (Vector)	Chap 5 Chap 11	
7	10/9 10/11	Understanding spatial data types (Vector) Understanding spatial data types (Raster)	Chap 14 Chap 6	
8	10/16 10/18	Understanding spatial data types (Raster) GIS analysis	Chap 15 Chap 15	Exam I
9	10/23 10/25	GIS analysis Map design	Chap 15 Chap 6	
10	10/30 11/1	Map design The Internet	Chap 12 Fu Chap 2	
11	11/6 11/8	The Internet and web design Client/server model and peer-to-peer model	Fu Chap 2 Fu Chap 3	
12	11/13 11/15	Geospatial mashup and Google map Overview of web mapping	Fu Chap 4 Chap 10 & 14 Fu Chap 8	HWK #3
13	11/20 11/22	No class (out of town) No class (Thanksgiving)		
14	11/27 11/29	Major web mapping programs Spatial statistics	Fu Chap 8 Parenteau	
15	12/4 12/6	Mobile GIS New developments and summary	Fu Chap 5 & 9 Wesolowski	Exam II