GEOG 4/581: Geographic Information Science I

Term: Fall 2019

Lecture: Monday and Wednesday 9:00-9:50am
220 Chapman

Labs: Section I: Tuesday 10:00-11:50pm
Section 2: Tuesday 12:00-1:50pm
Section 3: Wednesday 12:00-1:50pm
Section 4: Thursday 10:00-11:50pm
442 McKenzie Hall- SSIL (Social Science Instructional Lab)

Professor: Dr. Carolyn Fish
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Office Hours: 10:00-noon on Wednesday or by appointment

Teaching Assistant (GE):   Shiloh Deitz
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Office Hours: Thursday 12-2pm in SSIL

Textbook: Not required, but if you are someone who learns well by reading, then it may be helpful. If you are someone who doesn't read your textbooks, it may not be worth it. No exam questions will be explicitly taken from the textbook.

Longley, Paul A., Michael F. Goodchild, David J. Maguire, and David W. Rhind. *Geographic information systems and science*. John Wiley & Sons, 2005.

A copy of the textbook is available on Course Reserve at the Knight Library for up to four hours. Renting the textbook on Amazon is far less expensive than buying it.

Course Description: This class is an introduction to concepts behind organizing, analyzing, and visually presenting geospatial information. This class addresses three major questions:

1. How can one sense and represent the variation in the world around us?
2. How to record, recall, and analyze this information?

3. How to communicate and discuss this information with others?

GIScience 1 explores these questions though the applied use of software designed to facilitate the collection, analysis, symbolization, and communication of information about the world; that is to turn observations of the real world into information useful for acting in the real world. This is often done with maps, and much of the work will involve the creation of maps.

Course Objectives:	After completing this course, students should be able to:

- Plan and execute basic GIS analysis using a software application framework.
- Communicate the results of an analysis through language and graphics.
- Articulate the characteristics of and differences between data representations.
- Identify and critique choices made in map design.
- Critically evaluate geospatial arguments in popular media.
- Develop skills in information-seeking.

Attendance Policy: You are expected to attend class. Attendance will be taken at each lecture and lab. You have a grace of 3 absences. After three, one percentage point is deducted from your final grade for each additional absence.

For example, a student with a 78% in the course who has six absences would be penalized 3% and their grade will drop to 75%.

You do not need to provide the professor or the GE with **any** information for absences. You may use them at your own discretion; however, you should use these absences wisely since any absences (no matter the reason) will be counted against your grade.

Grading: 60% — Lab assignments. Due at the start of the next lab's session.
40% — Exams: Two will be conducted, in-class.
(Attendance is only negative on your grade after you have missed 3 classes, see policy)

A+	95-100	C+	77-79.9
A	92-94.9	C	74-76.9
A-	90-91.9	C-	70-73.9
B+	87-89.9	D+	67-69.9
B	84-86.9	D	64-66.9
B-	80-83.9	D-	60-63.9
		F	59.9 and below

Graduate students will be graded differently, see below under "Graduate Students."

Exams: There are two non-cumulative exams. If you need to miss an exam, please request permission to take a makeup exam. An alternative exam will be provided for you that requests responses for six to eight essay questions as opposed to the short answer exam given during the normal exam period.

Lab Assignments: There are seven lab assignments. Each lab assignment will be introduced by the GE during your lab session. Most lab assignments are due one week after they were introduced and assigned. These will be turned in on Canvas.

Labs turned in late (beginning at one minute late) will be penalized by 10% deduction per day. After 10 days late, students will receive a zero for an assignment.

In-class activities: During most classes, we will do an in-class activity. These will be interactive: the activity will involve the entire class or a small group. Exam questions often come directly from in-class activities, it behooves you to participate and be present for activities.

Graduate Students: Graduate students taking the course for 581 credit will be graded on a different grading scale. These students are also required to do an additional 40 hours of work, per university policy. To account for this, graduate students will need to complete a final project which will be presented during lecture in Week 10. It is best to begin this project early and there will be several milestones to complete throughout the course for full credit for the final project. Preferably this project is related to or for your thesis or dissertation. The instructor will meet with graduate students early in the quarter to go over the additional requirements for 581 credit.

Student Accessibility: The University of Oregon is working to create inclusive learning environments. Please notify the professor if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center (AEC) in 360 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu.

Students registered with AEC must send a notification letter to the professor during Week 1 or 2 of the term and must meet with the professor during this time to assure that the professor is providing appropriate accommodations for the student.

Student Conduct: The University Student Conduct Code (available at https://dos.uoregon.edu/conduct) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students' obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at researchguides.uoregon.edu/citing-plagiarism.

The professor of this course reserves the right to change aspects of this syllabus at any time during the term. Students will be informed if and when this occurs.

	Date				Lectures	Readings	Labs
1	Oct	2	W	1	Introduction to GIScience I	Ch 1	Lab 1
2	Oct	7	M	2	The History & Nature of GIS	Ch 2	Lab 2
	Oct	9	W	3	Projections & Coordinate Systems	Ch 4	
3	Oct	14	M	4	Vector Data Model	Ch 3	Lab 3
	Oct	16	W	5	Vector Operations	Ch 7	
4	Oct	21	M	6	Selection and SQL	Ch 13	Lab 4
	Oct	23	W	7	Joins & Spatial Analysis	Ch 9	
5	Oct	28	M	8	Review of concepts	Ch 14	Lab 5
	Oct	30	W		**Test 1**		
6	Nov	4	M	9	Raster Data Models	Ch 11	Lab 6
	Nov	6	W	10	Raster Analysis	TBD	
7	Nov	11	M	11	Data Acquisition	Ch 8	Lab 6 (cont)
	Nov	13	W	12	Spatial Modeling	Ch 15	
8	Nov	18	M	13	Cartography & Geovisualization	Ch 11 &12	Lab 7
	Nov	20	W	14	TBD	TBD	
9	Nov	25	M	15	Guest Lecture: Riley Moore		Lab 7 (con't)
	Nov	27	W	16	Review of concepts		
10	Dec	2	M	17	Grad Student Final Project Presentations		
	Dec	4	W	18	Grad Student Final Project Presentations		
Finals Week					**Test 2**		