

Geography 181: Principles of GIScience

Contact Information

Instructor: Nastaran Saberi,
PhD Candidate, Department of Geography and Environmental Management,
Office: EV1-401 A,
Office Hours: Tuesdays 9:00am to 11:00am.
If you need to schedule an appointment outside of these drop-in hours, please contact me.
Phone: ext. 33303,
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From Monday to Friday, I make every effort to answer emails within 24hrs. Email sent on the weekend will normally be answered on the following Monday.

Teaching Assistants

TBA

Course Description

Focus is on the issues and foundations of Geographic Information Science. Topics covered include geographic coordinate systems, map projections, mapping quantitative data, compiling data from a variety of sources, and the production of effective maps based on established principles of cartographic design.

Course Objectives

By the end of the course, students should be able to:

1. Compare and contrast different classes of maps.
2. Identify and distinguish different types of geographic co-ordinate systems and map projections
3. Identify and apply the computer-based techniques for the production of quantitative maps
4. Recognize and apply the principals of map design to the creation and evaluation of maps.

Course Presentation

Lecture:

The course is offered online through LEARN.

Labs:

Labs are completed individually using QGIS loaded on your own computer. You must have access to a computer that is capable of running QGIS.

Additional Course Resources

Lecture Materials

Lecture files are provided on the LEARN website.

Required Textbook:

Making Maps (3rd edition): A Visual Guide to Map Design for GIS. Krygier & Wood. Guilford Press, 2016.

University of Waterloo LEARN Course Environment

LEARN is a web-based course management system that enables instructors to manage course materials (posting of lecture notes etc.), interact with their students (drop boxes for student submissions, on-line quizzes, discussion boards, course e-mail etc.), and provide feedback (grades, assignment comments etc.). Data files required for lab assignments will also be found here.

Logging Into LEARN

Once you have started up your browser, type in the following URL:

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<https://learn.uwaterloo.ca/>

Provide your Quest/UWdir userid and password.

Checking Your UserID and Password Your password can be checked by going to:

<https://watiam.uwaterloo.ca/idm/user/login.jsp>

If you can't get on after checking and resetting your password, please confirm with your instructor that you are on the class roster. Only students with courses using LEARN will have access to the site.

Evaluation

Final grades for the course will be assigned as follows:

➤ 8 Lab Assignments	60%
➤ Final Test	<u>40%</u>
	100%

Deadlines

Lab assignments are due at the dates and times specified on LEARN. **Late labs will not be accepted.** If for some reason you are unable to hand in your lab at the due date, contact the instructor as soon as possible.

Note for Students with Disabilities: The Office for persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Lecture and Lab Schedule*

Week of	Lecture Topic(s)	Lab Assignment Due Date
Week 1	An Introduction to Maps	Lab 1: Intro to QGIS Due: May 11, 4pm.
Week 2	The History of Cartography	
Week 3	The size and shape of the Earth, geographic coordinates	Lab 2: Accessing Data Due May 25, 4pm.
Week 4	Map Projections	
Week 5	Issues related to the accuracy of maps	Lab 3: Projections Due: June 8, 4pm
Week 6	Principles of Map Design	
Week 7	Mapping Quantitative Data	Lab 4: Proportional Symbol Maps Due: Jun 22, 4pm.
Week 8	Choropleth Maps and classification	Lab 5: Choropleth Maps Due: Jun 29, 4pm.
Week 9	Mapping Terrain	Lab 6: Terrain Maps Due: July 6, 4pm.
Week 10	Online mapping and the Geoweb	Lab 7: Web Mapping Due: July 13, 4pm.
Week 11	Maps and Society	Lab 8: Final Map Poster Due: July 20, 4pm
Week 12	Future directions in mapping	
	Final Examination	

* The instructor reserves the right to make changes to the schedule as necessary.

Course Outline

Spring 2018

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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. The University's guiding principles on academic integrity can be found here: <http://uwaterloo.ca/academicintegrity>. ENV students are strongly encouraged to review the material provided by the university's Academic Integrity office specifically for students: <http://uwaterloo.ca/academicintegrity/Students/index.html>

Students are also expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. Students may also complete the following tutorial: <https://uwaterloo.ca/library/get-assignment-and-research-help/academic-integrity/academic-integrity-tutorial>

When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline: <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71>. Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance: <https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70>

Unclaimed assignments

Unclaimed assignments will be retained for one year after final grades are posted to Quest. After that time, they will be destroyed in compliance with UW's [confidential shredding procedures](#).

Note for students with disabilities:

[AccessAbility Services](#), located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with [AccessAbility Services](#) at the beginning of each academic term.

Mental Health:

The University of Waterloo, the Faculty of Environment and our Departments consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges - physical and / or emotional. **Please note that help is available.** Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services <http://www.uwaterloo.ca/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.

Religious Observances:

Student needs to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

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 contact your Undergraduate Advisor for details.

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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

Intellectual Property:

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational

experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).