

Geography 181: Designing Effective Maps

Contact Information

Instructor: Peter Deadman,
Associate Professor, Department of Geography and Environmental Management,
Office: EV1-102,
Office Hours: Thursdays 3:00pm to 5:00pm.
If you need to schedule an appointment outside of these drop-in hours, please contact me.
Phone: ext. 33404,
E-mail: pjdeadma@uwaterloo.ca
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

Yixin Chen y2477che@uwaterloo.ca
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Plus one more TBD

Course Description

Focus is on the issues and foundations of modern digital cartography. Topics covered include geographic coordinate systems, map projections, mapping quantitative data, developing online maps, and the impact of maps on society. Students will learn computer techniques to produce 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 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:

Wednesdays, 10:30am to 12:20pm, in DC 1350

Labs: Monday (103) 12:30am – 2:20pm -

Tuesday (101) 8:30am – 10:20am -

Tuesday (106) 12:30pm – 2:20pm -

Tuesday (107) 2:30pm – 4:20pm -

Tuesday (108) 6:30pm – 8:20pm -

Thursday (104) 2:30pm – 4:20pm -

Friday (102) 8:30am – 10:20am -

Friday (105) 12:30pm – 2:20pm -

The Galileo Lab

All lab classes will be held in the Galileo GIS Lab (EV1 240). Access to the lab is gained by entering a code in the keypad combination lock on the door of the lab (This term, the code is: 732411). Do not give the combination to anyone else. We are trying to limit access to this lab to those who need to use it for course work and for those that need to use the specialised software only available on these computers. This

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will provide you with greater access to the computers in this lab when you need them to complete assignments. Everyone who needs to get into the Lab can obtain the combination from the Mapping, Analysis and Design (MAD) Helpdesk in EV2 163A or from their course instructor. Please make sure you carefully backup all digital files that you use or create in this class. Do not leave any of your files on the local lab computer.

Please note: No food or drink is to be brought into this lab.

IMPORTANT: Please bring a pair of headphones/earbuds to each of the lab sessions held in the Galileo Lab. You will need these for the tutorial videos.

Additional Course Resources

Lecture Materials

The PowerPoint presentations used in the lecture will be provided on the LEARN website.

Please Note: The Lecture PDF files are provided to simplify the note taking process and to ensure that diagrams are copied correctly. The Lecture files do not replace the lectures. I will add details during class, explaining diagrams, images, and concepts. You are responsible for all information presented in lectures.

Required Textbook:

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

Geographic Information System Software: QGIS

To complete the lab assignments for this course, we will be using QGIS (qgis.com), an open source GIS that you can download and use free. **Note:** Although the latest version of QGIS is 3.2, this version is not yet stable and has limited documentation. **So, please install the more stable long-term release of QGIS, version 2.18.**

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:

<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:

• 9 Lab Assignments	50%
• Test 1 (October 24 th in class)	25%
• Test 2 (November 28 th in class)	25%
Total	100%

Course Outline

Fall 2018

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Deadlines

Lab assignments are due at the beginning of your lab session on the day specified at the top of the lab. This will normally be one week after they have been handed out. A paper copy of each lab assignment must be handed in on or before the due date. **Late labs will not be accepted.** If for some reason you are unable to hand in your lab at the due date, contact your lab T.A. as soon as possible.

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.

Lecture and Lab Schedule*

Week of	Lecture Topic(s)	Lab Assignment
10 - Sept.	Course Overview/Administration The Nature of Maps	No labs
17 - Sept.	The Scope of Cartography Cartographic Fundamentals	Lab 1: Map Library Resources (6%)
24 - Sept.	Principles of Map Projections Map Projections	Lab 2: Intro to QGIS (5%) Lab 1 Due
1 - Oct.	Map Projections	Lab 3: Obtaining Spatial Data (5%) Lab 2 Due
8 - Oct.	Lecture on Friday, Oct 12 Map Co-ordinates/Geometric Measurement	No lab this week
15 - Oct.	Map Co-ordinates/Geometric Measurement Mapping Quantitative Data	Lab 4: Map projections (5%) Lab 3 Due
22 - Oct.	Test 1 (October 24th) Choropleth Maps	Lab 5: Choropleth Maps (5%) Lab 4 Due
29 - Oct.	Choropleth Maps Point Symbol Maps	Lab 6: Proportional Symbol Maps (5%) Lab 5 Due
5 - Nov.	Terrain Representation Principles of Map Design	Lab 7: Topographic Maps (6%) Lab 6 Due
12 - Nov.	Map Design / Cartographic Abstraction Map design / Colour	Lab 8: Web Mapping (5%) Lab 7 Due
19 - Nov.	Understanding Error Web Mapping	Lab 9: Map design (8%) Lab 8 Due
26 - Nov.	Review Test 2 (November 28th)	Lab 9 Due

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

Reading List

The following chapters will be covered in the course text...

Lecture Topic

Readings

The Scope of Cartography
The Nature of Maps and Mapmaking
Principles of Map Projections
Mapping Quantitative Data
Choropleth Maps

Introduction and Chapter 1
Chapter 2
Chapter 5
Chapter 3 &4
Chapter 8

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Principles of Map Design
Map Design/Colour
Map Design/Elements

Chapter 6 &7
Chapter 11
Chapter 9 & 10

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

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:

It is the student's responsibility 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 their 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.

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 grounds. 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

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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).

Communications with Instructor and Teaching Assistants:

All communication with students must be through either the student's University of Waterloo email account or via Learn. If a student emails the instructor or TA from a personal account they will be requested to resend the email using their personal University of Waterloo email account.

Recording lectures:

Use of recording devices during lectures is only allowed with explicit permission of the instructor of the course.

If allowed, video recordings may only include images of the instructor and not fellow classmates.

Posting of videos or links to the video to any website, including but not limited to social media sites such as: facebook, twitter, etc., is strictly prohibited.

Co-op interviews and class attendance

Co-op students are encouraged to try and choose interview time slots that result in the least amount of disruption to class schedules. When this is challenging, or not possible, a student may miss a portion of a class meeting for an interview. Instructors are asked for leniency in these situations; but, a co-op interview does not relieve the student of any requirements associated with that class meeting.

When a co-op interview conflicts with an in-class evaluation mechanism (e.g., test, quiz, presentation, critique), class attendance takes precedence and the onus is on the student to reschedule the interview. CECA provides an interview conflict procedure to manage these situations.

Students will be required to provide copies of their interview schedules (they may be printed from WaterlooWorks) should there be a need to verify class absence due to co-op interviews.