

# DESIGNING EFFECTIVE MAPS WINTER 2023

## GEOG 181

Published Jan 10, 2023

### CLASS SCHEDULE

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Section	Location	Time	Instructor(s)
GEOG 181 001 [LEC]	EV3 1408	Tuesdays 2:30 p.m. - 4:20 p.m.	Brandon Van Huizen bvanhuizen@uwaterloo.ca
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### INSTRUCTOR / TA INFORMATION

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#### CONTACT INFORMATION

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**Instructor:** Brandon Van Huizen,

Sessional Instructor, Post-Doctoral Fellow, Department of Geography and Environmental Management,

**Office:** EV1- 235,

**Office Hours:** Tuesdays 12:30 PM to 2:30 PM.

If you need to schedule an appointment outside of these drop-in hours, please contact me.

**E-mail:** [bvanhuiz@uwaterloo.ca](mailto:bvanhuiz@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

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Julie DePauw [jdepauw@uwaterloo.ca](mailto:jdepauw@uwaterloo.ca) (mailto:jdepauw@uwaterloo.ca)

Amerald Fang [axlfang@uwaterloo.ca](mailto:axlfang@uwaterloo.ca) (mailto:axlfang@uwaterloo.ca)

Carl Tutton [cg2tutto@uwaterloo.ca](mailto:cg2tutto@uwaterloo.ca) (mailto:cg2tutto@uwaterloo.ca)

## COURSE DESCRIPTION

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### *Calendar Description for GEOG 181*

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. [Also offered online]

Antireq: GEOG 165

## COURSE PRESENTATION

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### LECTURE:

Thursdays, 12:30 PM to 2:20 PM, in B1 - 271

<b>Labs:</b>	LAB 101	Mondays	08:30-10:20	EV1 240
	LAB 102	Mondays	10:30-12:20	EV1 240
	LAB 103	Tuesdays	8:30-10:20	EV1 240
	LAB 104	Tuesdays	10:30-12:20	EV1 240
	LAB 105	Thursdays	12:30-02:20	EV1 240

### MANAGING THE COVID-19 PANDEMIC

The University of Waterloo has adopted a variety of health and safety policies in an effort to provide a safe in-person learning environment this fall. Please review the COVID-19 information <https://uwaterloo.ca/coronavirus/#:~:text=Wear%20a%20mask%20that%20fits,any%20symptoms%20of%20COVID%2D19.>

#### **January 5 - Winter term: masks strongly recommended but optional**

Starting January 9, a mask requirement will not continue but we strongly encourage you to think of the people around you and help limit the spread of COVID by wearing a mask in indoor settings.

As always, we will not hesitate to bring back a requirement to wear masks if the situation requires it at any point during the term.

**If there is a lockdown this Winter (or the instructor is ill):** we will transition to the online delivery of the course, using the online resources that will be made available through the Learn environment. More details will be provided in the event of a lockdown or illness.

## THE GALILEO LAB

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Lab classes will be held in EV1 240. Access to the lab is gained by entering a code in the keypad combination lock on the door of the lab (**496974**). Do not give the combination to anyone else. We expect you to respect all COVID-related

protocols outlined by your TA, or 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 is to be brought into this lab and outside of water (in a bottle with a straw that can be accessed with your mask on) no drink is to be brought into this lab.

## LEARNING OUTCOMES

**By the end of this 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 computer based techniques for the production of maps                 |
| 4. Recognize and apply the principles of map design to the creation and evaluation of maps |

## TENTATIVE COURSE SCHEDULE

**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.**

## LECTURE AND LAB SCHEDULE\*

WEEK OF	LECTURE TOPIC(S)	LAB ASSIGNMENT
9 - Jan.	Course Overview/Administration The Nature of Maps	No labs this week.
16 - Jan.	The Scope of Cartography Cartographic Fundamentals	Work on Lab 1
23 - Jan.	Principles of Map Projections Map Projections	Work on Lab 2 <b>Lab 1 due Jan. 27</b>
30 - Jan.	Map Projections	Work on Lab 3 <b>Lab 2 due Feb. 3</b>
6 - Feb.	Map Co-ordinates/Geometric Measurement	Work on Lab 4 <b>Lab 3 due Feb 10</b>
13 - Feb.	Map Co-ordinates/Geometric Measurement Mapping Quantitative Data <b>Test 1 (Feb 14<sup>th</sup> )</b>	Work on Lab 5 <b>Lab 4 due Feb. 17</b>

20 – Feb.	<b>Family Day / Reading Week</b>	
27 - Feb.	Choropleth Maps	Work on Lab 6 <b>Lab 5 due Mar. 3</b>
6 – Mar.	Choropleth Maps Point Symbol Maps	Work on Lab 7 <b>Lab 6 due Mar. 10</b>
13 - Mar.	Terrain Representation Principles of Map Design	Work on Lab 8 <b>Lab 7 due Mar. 17</b>
20 - Mar.	Map Design / Cartographic Abstraction Map design / Colour	Work on Lab 8 <b>Lab 8 due Mar. 24</b>
27 – Mar.	Understanding Error Web Mapping	
1 – April.	<b>Test 2 (April 4<sup>th</sup>)</b>	

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

## TEXTS / MATERIALS

### Textbook

Title / Name	Notes / Comments	Required
Making Maps (3rd edition): A Visual Guide to Map Design for GIS. Krygier and Wood, Guilford Press		Yes

There is a digital version of this book available for purchase through the bookstore. Check the textbook listing on the Bookstore website (Booklook) for more information. Feel free to use an older edition of this textbook if you can find it. Used copies of this book may also be available. Consider sharing the book with a classmate.

You should just read the book cover-to-cover, reading a chapter or two every week (the book is an easy read). The following topics will be covered in the course...

### Lecture Topic

### Readings

The Scope of Cartography

Introduction and Chapter 1 How to Make a Map

The Nature of Maps and Mapmaking

Chapter 2: What's Your Map for?

Principles of Map Projections

Chapter 5: Geographic Framework

Mapping Quantitative Data

Chapter 3: Mappable Data & 4:Map Making Tools

Choropleth Maps	Chapter 8: Map Generalization and Classification
Principles of Map Design Design	Chapter 6: The Big Picture of Map Design & 7: The inner workings of Map Design
Map Design/Colour	Chapter 11: Worlds on Maps
Map Design/Elements	Chapter 9: Map Symbolization & 10: Map Symbol Abstraction

### Geographic Information System Software: QGIS

To complete the labs for this course, we will be using QGIS (qgis.com), an open source GIS that you can download and use free. **Note:** Although version 3.26 is available, this version is not yet stable and has limited documentation. **So, please install the more stable long-term release of QGIS, version 3.22.**

## 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/> (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> (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.

## ADDITIONAL COURSE RESOURCES

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### 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.

## STUDENT ASSESSMENT

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Component	Value
8 Lab Assignments	50%

Component	Value
Test 1 - Oct. 20th	25%
Test 2 - Dec. 1st	25%

## DEADLINES

Lab assignments are due Fridays at 4:00 PM on the dates specified in the schedule, submitted via dropbox on LEARN. **All assignments are to be submitted digitally, no hard copies.**

**Late labs will receive a penalty of -10% per day late.**

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.

## ASSIGNMENT SCREENING

No assignment screening will be used in this course.

## ADMINISTRATIVE POLICY

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**Territorial Acknowledgement:** The University of Waterloo acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. Our main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Our active work toward reconciliation takes place across our campuses through research, learning, teaching, and community building, and is centralized within the [Office of Indigenous Relations](https://uwaterloo.ca/indigenous) (<https://uwaterloo.ca/indigenous>)

**Intellectual Property:** For further information on IP related to teaching, please see [https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume\\_1\\_issue\\_3\\_winter\\_2018.pdf](https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume_1_issue_3_winter_2018.pdf) ([https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume\\_1\\_issue\\_3\\_winter\\_2018.pdf](https://uwaterloo.ca/legal-and-immigration-services/sites/ca.legal-and-immigration-services/files/uploads/files/volume_1_issue_3_winter_2018.pdf)) and the Guidelines for Faculty, Staff and Students Entering Relationships with External Organizations Offering Access to Course Materials, <https://uwaterloo.ca/secretariat/faculty-staff-and-students-entering-relationships-external> (<https://uwaterloo.ca/secretariat/faculty-staff-and-students-entering-relationships-external>) . The following text is recommended:

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).

**Research Ethics:** The University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Human Research and Animal Care (Office). The ethics review and clearance processes are intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants (Guidelines) as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.). If the development of your research proposal consists of research that involves humans as participants, please contact the course instructor for guidance and see: <https://uwaterloo.ca/research/office-research-ethics> (<https://uwaterloo.ca/research/office-research-ethics>)

**Anti-racism Statement:** The University of Waterloo does not tolerate racism or any other form of discrimination and expects campus community members to contribute to a culture where all members feel safe and valued. Any member of the campus community who has experienced racism or discrimination at the University is encouraged to seek guidance from the Office of Equity, Diversity, Inclusion & Anti-racism (EDI-R) via email at [equity@uwaterloo.ca](mailto:equity@uwaterloo.ca) (<mailto:equity@uwaterloo.ca>) or through their website: [uwaterloo.ca/human-rights-equity-inclusion/about/equity-office3](https://uwaterloo.ca/human-rights-equity-inclusion/about/equity-office3)

**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. CEE 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.

**Declaring an absence:** Regardless of the process used to declare an absence, instructors maintain agency over decisions regarding course component accommodations.

Self-declared absences (for flu-like illness, short-term 48 hour self declared absences) must be submitted through Quest.

Absences requiring documentation (e.g. Verification of Illness Form, bereavement, etc.) - send your documentation to [env-vif@uwaterloo.ca](mailto:env-vif@uwaterloo.ca). Do not send documentation to your advisor, course instructor, teaching assistant, or lab coordinator. Submission to [env-vif@uwaterloo.ca](mailto:env-vif@uwaterloo.ca) () will notify all of your instructors of your absence. Students taking courses in Arts that require accommodation, should reach out to those instructors independently.

**Mental Health:** The University of Waterloo, the Faculty of Environment and our Departments/Schools 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 <https://uwaterloo.ca/campus-wellness/>

(<https://uwaterloo.ca/campus-wellness/>) 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.

All students are encouraged to download the WatSAFE app which is available free through the google and iOS app stores. The WatSAFE app provides on- and off-campus contacts for students in distress, including international students, and other information related to campus safety and security.

**Religious Observances:** Students need 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.

**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 lecture:** 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.

## UNIVERSITY POLICY

**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 [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.]

**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](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) . 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 to avoid committing an academic offence, and to take responsibility for their actions. [Check [the Office of Academic Integrity](https://uwaterloo.ca/academic-integrity/) (<https://uwaterloo.ca/academic-integrity/>) for more information.] 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](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) . For typical penalties, check [Guidelines for the Assessment of Penalties](https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties) (<https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties>) .

**Appeals:** A decision made or penalty imposed under [Policy 70, Student Petitions and Grievances](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70>) (other than a petition) or [Policy 71, Student Discipline](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71>) may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to [Policy 72, Student Appeals](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72) (<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72>) .

**Note for students with disabilities:** [AccessAbility Services](https://uwaterloo.ca/disability-services/) (<https://uwaterloo.ca/disability-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.

**Turnitin.com:** Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server,



therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit alternate assignment.