

GEOGRAPHY FINAL COURSE OUTLINE: SUMMER 2021

GEOGRAPHY 597

GFC HOURS (3-0)

Advanced Topics in Human Geography

Section	Days	Time	Location
LEC 01			TRAVEL STUDY

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Official Course Description

An examination of selected topics in Human Geography in a seminar format.

Unofficial title

Artificial Intelligence for Community Public Health: Seattle

Course Objectives

Geography 597 will be offered during the summer 2021 overseas field school entitled “Artificial Intelligence for Community Public Health”. This course will focus on a practicum project in collaboration with a local urban public health organization in Seattle, WA.

This is a two-part experiential course (across GEOG 582 and GEOG 596) designed to help students develop and apply computational skills for aiding community public health. Students will develop these skills in close collaboration and consultation with data scientists and a partner organization, based at the University of Washington eScience Institute’s Data Science for Social Good program. The major learning goals are around artificial intelligence (AI), but students will also develop their applied critical problem-solving skills and deep understanding of urban social and political geographies.

Over the past decade, public health practitioners have increasingly directed energy and resources to AI methods, to see whether and how these new computational approaches might improve their work’s efficacy. At the same time, new concerns have been raised about the impacts of AI on health equity, due to some groups’ social position and other socially-determined circumstances. This concern has motivated a nationwide Canadian initiative called “AI for Public Health”, spearheaded partly by University of Calgary researchers, to host a summer institute to directly tackle the challenge of health equity in the context of new AI approaches.

In this program, students will address this challenge in a city uniquely positioned to contribute to community public health. Seattle is home to a famously rich technology industry, a world-class public health educational program, and a diversity of organizations working on community well-being. The Data Science for Social Good program, held every summer since 2015, has been at the forefront of connecting these various actors. Students participating in this study abroad program will have a diverse range of skills prior to departing, and will develop technical, interpretive, creative, and analytical skills in the course of this program. They will also develop their professional networks and key networking skills, and will learn from other students, researchers, and practitioners at the eScience Institute.

Course Learning Outcomes

The Department of Geography is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes to which they contribute, and the expected level of achievement.

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

Course Learning Outcomes	PLO(s)*	Level(s)**
Explain how different artificial intelligence algorithms might address a particular public health-related inquiry differently.	3,4,6,8	3
Compose an advanced-level artificial intelligence algorithm that demonstrates your critical reflection on the role of computation in community well-being and community health.	1,2,3,4,6,7,8	3
Contribute to community well-being and community public health by leveraging artificial intelligence methods.	4,5,7,8	3
Propose tangible ways to use artificial intelligence to address issues related to health inequity.	3,4,5,7,8	3
Reflect on the politics, ethics, opportunities, and challenges of using artificial intelligence for community health.	1,2,3,4,5,6,7,8	3

**PLOs = Program Learning Outcomes: 1 = reflect and communicate diverse human-environment perspectives, 2 = identify and explain human-environment processes, 3 = implement sampling, data collection, analyses and communication methods, 4 = analyze spatial and temporal aspects of human-environment systems, 5 = employ knowledge, arguments, and methodologies for solving human-environment problems, 6 = evaluate geospatial data and manipulate it to create cartographic products, 7 = communicate geographic concepts using oral, written, graphic, and cartographic modes, and 8 = demonstrate literacy skills.*

***Levels: 1 = Introductory, 2 = Intermediate, and 3 = Advanced.*

Prerequisites:

Advanced coursework in at least one of: (1) computer science, (2) urban geography, (3) public health, (4) human geography; OR graduate student standing.

A working knowledge of computer science principles is desirable but not necessary. Each student team will have someone with technical expertise and others with topical expertise.

Learning Resources

Required readings will be posted to the course D2L.

Grading (Weighting)

Weight	Assessed Components	Due
20 %	Weekly blog posts	July 30 th and Aug 7 th , 11:59pm.
15	Course participation	We will gather as a class every day for one hour to discuss course readings and project progress.
25	Final collaborative AI product	August 6, 11:59pm 5% of this grade will be given for completing a peer and self assessment. Final assignment marks will be weighted according to general consensus of workload distribution and effort.
20	Final presentation	August 6 during the day

20	Post-trip reflection essay	August 8, 11:59pm, 2 days after returning to Calgary.
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There is no final exam for this course.

Weekly Blog Posts

As an externally facing reflection on your experience and your learning in this program, each of you will write two blog posts for a course blog to communicate what you are learning in and from the city of Seattle to your peers at UofC, to your family and friends, and, perhaps, future employers.

Your posts should creatively incorporate theoretical and practical material from lectures and readings, but, rather than using formal academic citation, this course material will become the framework and toolkit that allows you to correspond with multiple publics. You should also contend with your own embodied experience as someone intervening in a city that is not your own, using methods that are often (falsely) seen to apply equally everywhere.

Course participation

Every day for at least one hour we will meet to discuss course readings and update each other on work progress. Think of these as team meetings. Your attendance and participation is important and not optional. I will expect you to contribute your critical reflections on the study abroad in relation to our readings. In other words, participation is not just showing up — it is showing up prepared and engaging thoughtfully and generously in all activities and with one another in the collective learning experience. What you learn in this study abroad is directly related to your willingness to engage wholeheartedly with the material, the assignments, and with one another. We expect you to come to each class meeting and activity on-time and prepared, and work to cultivate an intellectual community in our time together. Sometimes for these meetings we will be joined by other DSSG participants.

Final collaborative AI product

The major deliverable for this course is an AI product that you, as a group, develop for your community collaborator. This AI must (1) address a need as expressed by that partner, (2) mobilize the knowledge of all team members, (3) explicitly address some issue related to health inequity, and (4) result from a deliberation of a range of AI approaches. Expect to deliver this product via Github.

Part of this submission will involve completing a short survey evaluating your contribution in relation to the others' contributions. I will use this to ensure that marks are distributed fairly across all team members.

Final presentation

On the final day of the program, you will present your work to your organization partner, to the DSSG program, and to the eScience Institute. This presentation should be an honest and reflective presentation as well as a technical one: the audience will want to know both what you produced, but also your critical reflection on the process. In other words, you should explain the AI approach you've taken, and mobilize technical jargon to explain it, but also think about its relation to inequity and socio-political critiques. It is essential to practice this presentation before delivering it, despite the short timeframe.

Post-trip reflection essay

Within a few days of the program conclusion, you should deliver a short essay (~3000-4500 words) making some personal reflections on what you've learned. Here I will be looking for deep grappling with course themes: around what exactly *is* community public health, what assumptions we took into "the field" of the DSSG program in Seattle, how we successfully or unsuccessfully we addressed our partner organization's needs, and what are the challenges and opportunities facing artificial intelligence for

community public health. In this essay you should mobilize course readings to help you think through your reflections. You may also reflect on your personal experience: how easy or difficult was it for you as an individual with your own set of embodied knowledges and experiences?

- It is essential to pass all components to pass the course as whole.
- Given the intensive timeline of this course, your punctual submission of assignments is crucial, and the late penalty proportionally steep. I will allow one (and only one) chance to re-submit work throughout the course. This late assignment will be penalized 10% per 24 hours of tardiness.

Grading System

96 – 100	A+	77 – 80	B	59 – 61	C-
90 – 95	A	71 – 76	B-	55 – 58	D+
86 – 89	A-	65 – 70	C+	50 – 54	D
81 – 85	B+	62 – 64	C	0 – 49	F

In the event that a student misses any course work due to illness, supporting documentation, such as a medical note or a statutory declaration will be required see: <https://www.ucalgary.ca/pubs/calendar/current/m-1.html>. We will accommodate reasonable unexpected difficulties related to health and wellbeing.

Please refer to <https://www.ucalgary.ca/registrar/registration/appeals/student-faq> for frequently asked questions concerning the provision of a medical note/statutory declaration.

Supplementary Fees

No supplementary fees will be assessed.

For additional detailed course information posted by the instructor, visit the course Desire2Learn page online at <https://d2l.ucalgary.ca/d2l/home>.

SUPPLEMENTAL INFORMATION

Learning Technologies and Requirements In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology.

- A computer with a supported operating system, as well as the latest security and malware updates
- A current and updated web browser
- Webcam (built in or external)
- Microphone and speaker (built-in or external) or headset with microphone
- Broadband internet connection

Principles of Conduct

The University Calendar includes a statement on the principles of conduct expected of all members of the university community (including students, faculty, administrators, any category of staff, practicum supervisors, and volunteers), whether on or off university property. This statement applies in all situations where members of the university community are acting in their university capacities. All members of the university community have a responsibility to familiarize themselves with the principles of conduct statement, which is available at: www.ucalgary.ca/pubs/calendar/current/k.html.

Plagiarism, Cheating, and Student Misconduct

The University of Calgary is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect.

Academic dishonesty is not an acceptable activity at the University of Calgary, and students are **strongly advised** to read the Student Misconduct section in the University Calendar at: www.ucalgary.ca/pubs/calendar/current/k-3.html. Often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are (1) presenting another student's work as your own, (2) presenting an author's work or ideas as your own without adequate citation, and (3) using work completed for another course. Such activities will not be tolerated in this course, and students suspected of academic misconduct will be dealt with according to the procedures outlined in the calendar at: www.ucalgary.ca/pubs/calendar/current/k-5.html.

Instructor Intellectual Property

Information on Instructor Intellectual Property can be found at <https://www.ucalgary.ca/policies/files/policies/Intellectual%20Property%20Policy.pdf>

Freedom of Information and Protection of Privacy

Freedom of Information and Protection of Privacy (FOIP) legislation in Alberta disallows the practice of having students retrieve assignments from a public place, such as outside an instructor's office, the department office, etc. Term assignments will be returned to students individually, during class or during the instructor's office hours; if students are unable to pick up their assignments from the instructor, they must provide the instructor with a stamped, self-addressed envelope to be used for the return of the assignment.

Human subjects

Students in the course will not be expected to participate as subjects or researchers when research on human subjects may take place.

Internet and electronic communication device information

There are not restrictions on the use of laptops and tablets in class if they are used to take notes or find information relevant to the class, and if there is no disturbance or distraction of other students or the instructor. Phones must be turned off during class, unless you have previously identified yourself to the instructor as a health care or law enforcement professional.

Posting of Grades and Picking-up of Assignments

Graded assignments will be returned by the instructor or teaching assistant personally during scheduled lecture or laboratory periods, unless they are made available electronically through the course D2L webpage. Grades and assignments will not be available at the Department of Geography's main office.

Academic Accommodations

It is the student's responsibility to request academic accommodations, according to the university policies and procedures listed in the University Calendar.

The student accommodation policy can be found at: www.ucalgary.ca/access/accommodations/policy. Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf.

Students needing an accommodation based on a protected ground other than disability should communicate this need, preferably in writing to their instructor or the Department Head (email: david.goldblum@ucalgary.ca).

Copyright Legislation

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Act.

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness, and academic success and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support, or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy website (<http://www.ucalgary.ca/mentalhealth/>).

Contact Information for Student and Faculty Representation

- Student Union VP Academic 403-220-3911, suwpaca@ucalgary.ca
- Students Union Representatives for the Faculty of Arts – 403-220-3913, arts1@su.ucalgary.ca, arts2@su.ucalgary.ca, arts3@su.ucalgary.ca, arts4@su.ucalgary.ca
- Student Ombuds Office information can be found at: www.ucalgary.ca/ombuds/