

## GEOGRAPHY FINAL COURSE OUTLINE: WINTER 2021

### GEOGRAPHY 485 GFC HOURS (3-2)

#### Quantitative Analysis

Section	Location	Meeting Time	Meeting Day
LEC 01	Web Based Course	09:30 – 10:45	Tu-Th – Synchronous sessions on Thursdays
LAB 01	Web Based Course		
LAB 02	Web Based Course	08:00 – 09:50	We
LAB 03	Web Based Course	14:00 – 15:50	Fr

Instructor: <b>Victoria Lukasik</b>	Email: <a href="mailto:vlukasik@ucalgary.ca">vlukasik@ucalgary.ca</a>
Office Hours: By Appointment	Office: All meetings will take place online
Teaching Assistant: <b>Andrew Clark</b>	Email: <a href="mailto:andrew.clark1@ucalgary.ca">andrew.clark1@ucalgary.ca</a>
Office Hours: TBD	Office: All meetings will take place online
Teaching Assistant: <b>Hoi Ming Lam</b>	Email: <a href="mailto:hoiming.lam@ucalgary.ca">hoiming.lam@ucalgary.ca</a>
Office Hours: TBD	Office: All meetings will take place online

#### Official Course Description

The field of Geography is marked by diversity in subject matter, which includes physical (environmental), human (socio-economic), and integrated (human-physical) topics of inquiry. It is therefore not surprising to learn that there exists a variety of analytical methods which geographers employ to study these subjects. This course serves as an introduction to these analytical approaches, taking you from basic terminology, probability theory, the collection (sampling) and presentation of geographic data (descriptive statistics), inferential testing (analysis) and interpretation. The course is targeted to junior level geography students and related disciplines with limited backgrounds in statistical methodology to geographic problem solving. Analytical examples and problem solving will involve the use of statistical computer packages in the lab. Students will leave this course with basic knowledge and experience in 'stats' fundamentals and an appreciation for how they are applied to various types of geographic data.

#### Course Objectives

The primary objective of this course is to introduce and explain introductory concepts of quantitative methods for use in a wide range of geographic analyses.

#### 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.

Course Learning Outcomes	PLO(s)	Level(s)
Distinguish and compare basic data characteristics, concepts, and strategies for preparation and display	3,6	1,2
Distinguish, compare and be able to apply basic descriptive statistics: measures of central tendency, dispersion, shape, etc	3,6	1,2
Explain the probabilistic underpinnings of inferential statistics: basic probability theory, probability distribution functions, problem-solving	3,5,6,7	1,2
Explain and be able to apply the framework for both classical and p-value hypothesis testing	3,6,7	1

Identify and interpret a variety of statistical tests wielded in an inferential, hypothesis-testing framework	3,5,6	1
Describe the basic concepts of simple bivariate regression, and set the stage for more advanced regression analyses in subsequent courses	3,6	1
Explain the particular challenges associated with quantitative analysis of spatial data: MAUP, autocorrelation, boundary issues, scale, etc.	3,6,7	1,2
Apply a variety of descriptive statistics and graphics to Geographic data for the purpose of summarizing the salient ideas.	3,5,6,7	1,2
Explain and apply the concept of probability; list probability distribution types; explain components and utility of the normal distribution and central limit theorem	3,6,7	1,2
Explain basic concepts in estimation and apply towards confidence interval generation; probability sampling concepts, types and size selection	3,5,6,7	1
Explain and apply terms and concepts in hypothesis testing; one, two and three or more sample difference of means parametric (and non-) tests; p-value	3,5,6,7	1
List, explain and apply inferential categorical difference tests and spatial sampling techniques to geographic data	3,5,6	1
Explain and apply tests appropriate to evaluate the statistical relationship between variables (both parametric and non-parametric tests).	3,5,6,7	1
Explain the concept of multivariate regression, spatial autocorrelation; multicollinearity and residual analysis	3,5,6,7	1

*\*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

3 units from Geography 231 or Geography 380

Computer skills are required. Students will be expected to be able to navigate D2L, use word processing and spreadsheet software (e.g. Microsoft Word and Excel, or similar programs), and to follow instructions for and troubleshoot the statistical software used in the course.

### Learning Resources

An Introduction to Statistical Problem Solving in Geography, 3rd edition by J. Chapman McGrew Jr., A.J. Lembo Jr., and Charles B. Monroe, published by Waveland Press Inc., 2014.

Additional readings, lecture material, video lectures, course information, assignments, and course discussion boards will be posted and available through the course Desire2Learn page online at <https://d2l.ucalgary.ca/d2l/home>. This site will be updated regularly and students are expected to login at least twice weekly to ensure they stay current with the course.

### 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

### Grading (Weighting)

1. Laboratory Assignments (6 Assignments)	40%
2. Informal Assignments / Discussion Board Participation	8%
3. Term Tests (2 Tests, 12% each)	24%
4. Registrar-Scheduled Final Exam	28%

It is not necessary to pass each course element in order to pass the course as a whole.

Late assignments without prior arrangement will be penalized 15% per day.

### 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

### Exams

#### The Term Tests and Final Exam will be conducted online on D2L.

- Term Test 1 will be available from 9:00 am on February 11<sup>th</sup> until 9:00 am on February 12<sup>th</sup>. Students must begin the exam during that time period, and will have 2 hours to complete the test.
- Term Test 2 will be available from 9:00 am on March 18<sup>th</sup> until 9:00 am on March 19<sup>th</sup>. Students must begin the exam during that time period, and will have 2 hours to complete the test.
- The Final Exam will be scheduled by the Registrar. Students will be permitted 3 hours to complete the final exam.
- Students are permitted access to their textbook, course notes, and all course content from D2L during the tests and exam. However, the tests and exam must be completed independently. **Any student who discusses or shares information about an active test/exam with anyone else in the course, or who seeks test/exam help from another person (whether in the course or not) is committing academic misconduct and will be subject to the resulting consequences. It is also forbidden to record / save any exam questions.**

At the discretion of the instructor and department, a deferred exam may be offered if a student misses a grading component due to illness or other valid reasons. Please inform the instructor as soon as possible at [vlukasik@ucalgary.ca](mailto:vlukasik@ucalgary.ca) to discuss.

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

Not applicable

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

## ***SUPPLEMENTAL INFORMATION***

### **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](http://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](http://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: <https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

### **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 may be expected to participate as researchers and/or subjects for one class.

### **Guidelines for Zoom Sessions**

Zoom is a video conferencing program that will allow us to meet at specific times for a "live" video conference, so that we can have the opportunity to meet each other virtually and discuss relevant course topics as a learning community.

To help ensure Zoom sessions are private, do not share Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

The use of video conferencing programs relies on participants to act ethically, honestly and with integrity; and in accordance with the principles of fairness, good faith and respect (as per the Code of Conduct). When entering Zoom or other video conferencing sessions (such as MS Teams), you play a role in helping

create an effective, safe and respectful learning environment. Please be mindful of how your behavior in these sessions may affect others. Participants are required to use names officially associated with their UCID (legal or preferred names listed in the Student Centre) when engaging in these activities. Instructors/moderators can remove those whose names do not appear on class rosters. Non-compliance may be investigated under relevant University of Calgary conduct policies (e.g. Student Non Academic Misconduct Policy). If participants have difficulties complying with this requirement, they should email the instructor of the class explaining why, so the instructor may consider whether to grant an exception, and on what terms. For more information on how to get the most out of your Zoom sessions visit: <https://elearn.ucalgary.ca/guidelines-for-zoom/>.

If you are unable to attend a Zoom session, please contact your instructor to arrange an alternative activity for the missed session (e.g., to review a recorded session). Please be prepared, as best as you are able, to join class in a quiet space that will allow you to be fully present and engaged in Zoom sessions. Students will be advised by their instructor when they are expected to turn on their webcam (for group work, presentations, etc.).

The instructor may record online Zoom class sessions for the purposes of supporting student learning in this class – such as making the recording available for review of the session or for students who miss a session. Students will be advised before the instructor initiates a recording of a Zoom session. These recordings will be used to support student learning only and will not be shared or used for any other purpose.

#### **Posting of Grades and Picking-up of Assignments**

Graded assignments will be made available electronically through the course D2L webpage. Grades and assignments will not be available at the Department of Geography 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:

[https://www.ucalgary.ca/policies/files/policies/student-accommodation-policy\\_0.pdf](https://www.ucalgary.ca/policies/files/policies/student-accommodation-policy_0.pdf)

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](http://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](mailto: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 <https://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright-policy.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, [suypaca@ucalgary.ca](mailto:suypaca@ucalgary.ca)
- Students Union Representatives for the Faculty of Arts – 403-220-3913, [arts1@su.ucalgary.ca](mailto:arts1@su.ucalgary.ca), [arts2@su.ucalgary.ca](mailto:arts2@su.ucalgary.ca), [arts3@su.ucalgary.ca](mailto:arts3@su.ucalgary.ca), [arts4@su.ucalgary.ca](mailto:arts4@su.ucalgary.ca)
- Student Ombuds Office information can be found at: [www.ucalgary.ca/ombuds/](http://www.ucalgary.ca/ombuds/)

#### **Campus Safewalk**

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus, including the LRT station, parking lots, bus zones, and university residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your campus destination.