

GEOG 2210B – Intro to Stats for Geographers

Course Outline: Section 001 Winter 2026

This course is taught in-person

1. Course Information

If you wish to contact us by email, please put **GEOG2210B in the subject line of the email and refer to section 7 on communication.



Classes Start	Spring Reading Week	Classes End	Study day(s)	Exam Period
January 5	February 14-22	April 9	April 10-11	April 12-30

Tuesday January 13, 2026: Last day to add a second-term half course

Monday February 16, 2026: Family Day

Monday March 30, 2026: Last day to drop a second term half course without penalty

Friday April 3, 2026: Good Friday



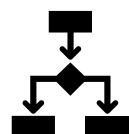
Course Instructor	Contact Information	Student drop-in hours
Geneviève Metson	gmetson@uwo.ca	Monday 11:30am-11:30pm

Teaching Assistant(s)	Contact Information	Student drop-in hours
Hui (Hailyee) Ha	hha24@uwo.ca	TBD
Haorui Zhou	haoruiz@uwo.ca	



☒ Student drop-in hours will be held in person during office hours (see above).

2. Calendar Description

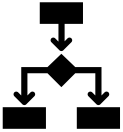


An introduction to the nature of geographical analysis of data and the application of statistical techniques and computing systems to in Geography: data collection, research design, sampling; models of spatial data, probability, distributions, hypothesis testing, correlations and regression.

2 lecture hours, 2 laboratory hours, 0.5 course

Antirequisites: [Biology 2244A/B](#), [Economics 2122A/B](#), [Economics 2222A/B](#), [Health Sciences 3801A/B](#), [MOS 2242A/B](#), the former Psychology 2810, the former Psychology 2820E, [Psychology 2811A/B](#), [Psychology 2830A/B](#), [Psychology 2850A/B](#), [Psychology 2851A/B](#), [Social Work 2207A/B](#), [Sociology 2205A/B](#), [Statistical Sciences 2035](#), [Statistical Sciences 2141A/B](#), [Statistical Sciences 2143A/B](#), [Statistical Sciences 2244A/B](#), [Statistical Sciences 2858A/B](#), [Statistical Sciences 2037A/B](#) if taken prior to Fall 2010.

Prerequisites: 1.0 course from [Geography 1100](#), [Geography 1200A/B](#), [Geography 1300A/B](#), [Geography 1400F/G](#), [Geography 1500F/G](#), [Geography 2131A/B](#), [Geography 2132A/B](#), [Geography 2133A/B](#), [Geography 2152F/G](#), [Geography 2153A/B](#), [Geography 2160A/B](#), [Environmental Science 1021F/G](#); or enrolment in the Major in Physical Geography and Environment, in the Certificate in Geographic Information Science, or in an Honours Earth Science Program for Professional Registration.



Prerequisite checking is the student's responsibility

Senate Regulations state, "unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites."

3. Textbook

Required textbook:

Lembo Jr., A. J., McGrew Jr., J. C.(2023). An introduction to statistical problem solving in geography. Waveland Press: Illinois 4th Edition ISBN 978-1-4786-4946-5. [Available at the bookstore for \\$88.50.](#)

There is also an [ebook available through the bookstore for\\$ 62.95](#)



The 3rd and 2nd editions of this textbook are also acceptable and may be at the library or second-hand:

McGrew Jr., J.C., Lembo, A., and Monroe, C. (2014). An introduction to statistical problem solving in geography. Waveland Press: Illinois. 3rd Edition. ISBN: 9781478611196

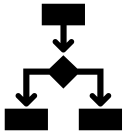
McGrew Jr. , J.C. and Monroe, C. (2000). An introduction to statistical problem solving in geography. McGraw Hill: Boston. 2nd Edition. ISBN: 0697229718

Note that the chapter numbering and examples are slightly different and thus require the student to pay attention to what content we are covering, not just the chapter numbers.

Additional readings and materials will be placed on OWL

4. Course Objectives and Format

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. This course serves as an introduction to these analytical approaches, taking you from the collection and presentation of geographic data to analysis and interpretation. The course is targeted for undergraduate students in geography and related disciplines with limited backgrounds in statistical approaches to geographic problem solving. Analytical examples and problem solving will involve the use of statistical computer packages. Students will leave this course with knowledge and experience in statistics and an appreciation for how they are applied to geographic issues.



Attendance is not required, but it is strongly encouraged.

All course material will be posted to the new OWL Brightspace learning environment: <https://westernu.brightspace.com/d2l/home>. Any changes will be indicated on the OWL site and discussed with the class.

Current versions of all popular browsers (e.g., Safari, Chrome, Edge, Firefox) are supported with OWL Brightspace; what is most important is that you update your browser frequently to ensure it is current. All JavaScript and cookies should be enabled.

If students need assistance, they can seek support on the [OWL Brightspace Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

5. Learning Outcomes

Upon successful completion of this course, students will be able to:

- Distinguish and compare basic data types and characteristics, concepts, and strategies for data collection (sampling), preparation, communication, and display
- Use tables and graphics to effectively summarize and communicate geographic data using spreadsheet and statistical software packages
- Understand, compare, and be able to apply basic descriptive statistics
- Explain basic concepts in estimation and apply towards confidence interval generation
- Identify and interpret the range of basic statistical tests common in an inferential hypothesis-testing framework
- Explain and apply tests appropriate to evaluate the statistical relationship between variables (both parametric and non-parametric tests, including spatial and non-spatially explicit data)



6. Course Content and Schedule

Week	Dates	Topic	Readings	Lab
1	January 5-9	Course introduction and Geographic Data	Ch 1 & 2	No Lab
2	January 12-16	Descriptive statistics (non-spatial and spatial)	Ch 3 & 4	Lab 1: Data basics and software
3	January 19-23	Probability	Ch 5 & 6	
4	January 26-30	Basic elements of sampling +probability review	Ch 7	Lab 2: Descriptive statistics
5	February 2-6	Estimation sampling, Inferential statistics and hypothesis testing	Ch 8 & 9	
6	February 9-13	Continue on hypothesis testing	Ch 8 & 9	Lab 3: Probability and hypothesis testing
	February 16-20	Spring Reading Week	N/A	
7	February 23-27	MIDTERM FEB 23 9:30-11:20am	Exam covers Ch 1-9	Lab 3 continued
8	March 2-6	Review hypothesis testing and Two sample tests	Ch 10	Lab 4: Difference tests
9	March 9-13	Three or more sample tests	Ch 11	
10	March 16-20	Categorical difference tests and Inferential spatial statistics	Ch 12, 13, 14, 15	Lab 5: Correlation and regression
11	March 23-27	Correlation	Ch 16	
12	March 30-April 3	Regression	Ch 17	No lab
13	April 6-9	Review	Come ready with questions	



7. Communication



☒ Students should check the OWL site every 24 – 48 hours

☒ This course will use the OWL Brightspace for discussions

- Students should post all course-related content questions on the discussion forum so that everyone can access answers to questions
- Students are welcome and encouraged to help answer questions posed by classmates.
- The discussion forums will be monitored every other day on weekdays by instructors.
- Responses may refer students to a section of the book or syllabus, or part of class notes or lab instructions. This is not to be dismissive of any questions or discourage asking; rather instructors want to encourage using the resources at hand and develop independent learning/research skills.
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☒ Students should email their instructor(s) and teaching assistant(s) only in relation to something that cannot be posted on the discussion forum

- All correspondence with the instructor and TAs should be professional and show how the student has used available resources to independently find an answer when correspondence is about class content. At the end of this section an example template to guide your professional email correspondence is provided.
- If the instructor team receives an email about something that should have been posted on the forum they will not respond.

☒ Students drop-in hours

- Students are encouraged to come ask questions about class material as well as general academic/research questions.
- Introduce yourself when you come in, and tell us what course you are in, and then follow the three *explain* steps under the *Example of professional correspondence structure* below
- Drop-in hours will be documented via meeting minutes posted as a discussion forum entry on OWL (i.e. any answers to class content questions will be available to all so thank the students who show up to drop-in hours!)



Example of professional correspondence structure

- The yellow highlight indicates where to fill in specific parts with context and questions.

Subject: **Geog2210B** *short statement about the nature of the inquiry*

Main body of the message:

Hello **Dr. xxx**,

I hope this email finds you well.

- *Explain the issue or question*
- *Explain what you have already done to find information or resources or what technique you have tried to resolve the issue.*
- *Explain exactly what you do not understand based on what you have already tried and what kind of assistance or help you are looking for from your TA or instructor.*

Thank you for your time.

Kind regards,

Your full name

8. Evaluation

Assessment	Format	Weighting	Due Date
Midterm test	In person	35%	February 23 (9:30-11:20 am)
Lab assignments	In person	20% (equal weighting, with the lowest grade dropped)	Varies (see schedule)
Final exam	In person	45%	TBD

Students are responsible for material covered in the lectures as well as the assigned chapters/sections in the text. **To pass the course, students must achieve a passing grade (>50%).**



- ☒ All assignments are due Monday's at noon ET unless otherwise specified
- ☒ Written assignments will be submitted to Turnitin (statement in policies below)
- ☒ Students will have unlimited submissions to Turnitin
- ☒ Late assessments without academic consideration will be subject to a late penalty of 25 %/day
- ☒ Academic consideration must be submitted at the latest within 48 hours of the assessment deadline, for assignments worth more than 10% of the final grade (see the flexibility statement under academic consideration for other assignments). Academic counselling will then issue the instructor a notification for the period of accommodation, and the student must contact the instructor directly to verify what the accommodation will look like for late submission.
- ☒ An assessment cannot be submitted after it has been returned to the class

- ☒ After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days

Exam and tests (35%+45%): The Midterm and Final will assess material covered in lectures, labs, and the textbook. Students are expected to understand and explain statistical concepts, define terms, perform statistical calculations, and interpret statistical software output. The exams may involve questions in mixed formats: multiple choice, true/false, fill-in-the-blanks, short answer, definitions, calculations, and diagram questions.

Lab assignments (20%): There will be five lab assignments throughout the term. Electronic versions of all assignments will be available via OWL prior to the beginning of the laboratory session during which they are assigned. Lab assignments will be due before the start of the next lab via OWL submission. It is the student's responsibility to ensure that completed assignments are properly uploaded to OWL.

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: *You* are responsible for your grades in this course.

9. Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).

General Information about missed work:

University policy on academic considerations are described [here](#). This policy requires that all requests for academic considerations must be accompanied by a self-attestation. Further information about academic considerations, and information about submitting this self-attestation with your academic consideration request may be found [here](#).

Please note that any academic considerations granted in this course will be determined by the instructor, in consultation with the academic advisors in your Faculty of Registration, by information presented in this course outline.

Formal Documentation Designation Statement:

The midterm test is designated as requiring formal documentation

Please note that this assessment is considered to be central to the learning objectives for this course. Accordingly, students seeking academic consideration for this assessment will be required to provide formal supporting documentation. Students who are granted academic consideration for this assessment will be provided with the following opportunity to make up this work: A make-up exam in the nearest departmental make-up exam session after the period of accommodation ends.

Flexibility statement

Laboratory exercises already have flexibility built in by dropping the lowest grade. For this reason, academic consideration will not be granted for missed laboratory exercises. If students miss 1/5 labs, the remaining 4 labs will be used in the calculation of the final grade. If students miss more than 1 lab, they will receive a grade of zero on each missed lab.

Absence from Course Commitments

Students must familiarize themselves with the Policy on Academic Consideration – Undergraduate Students in First Entry Programs

Students missing course work for medical, compassionate or extenuating circumstances can request academic consideration by completing a request at the central academic consideration portal. Students are permitted one academic consideration request per course per term without supporting documentation. Note that supporting documentation is **always** required for academic consideration requests for examinations scheduled by the office of the registrar (e.g. December and April exams) and for practical laboratory and performance tests typically scheduled during the last week of the term. Students should also note that the instructor may designate one assessment per course per term that requires supporting documentation. This designated assessment is described elsewhere in this document. Please note that any academic considerations granted in this course will be determined by the instructor of this course, in consultation with the academic advisors in your Faculty of Registration, in accordance with information presented in this course outline. Supporting documentation for academic considerations for absences due to illness should use the Student Medical Certificate or, where that is not possible, equivalent documentation by a health care practitioner.

Course Assessments that Require Supporting Documentation

For this course the following assessment has been designated as requiring supporting documentation: **Midterm test February 27th 2026 9:30am-11:20am** (this may change depending on instructor availability, but any change would be announced on OWL).

Academic Consideration for Course Components with Flexible Deadlines

This course does not have flexible deadlines

Accommodation for Religious Holidays

Students should review the policy for Accommodation for Religious Holidays. Where a student will be unable to write examinations and term tests due to a conflicting religious holiday, they

should inform their instructors as soon as possible but not later than two weeks prior to writing the examination/term test. In the case of conflict with a midterm test, students should inform their instructor as soon as possible but not later than one week prior to the midterm.

10. Make-up Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents.

The format and content of make-ups may differ substantially from the scheduled test or examination.

11. Use of Electronic Devices

No electronic devices such as smart watches, computers, phones, or tablets will be allowed during tests and examinations. Only a calculator will be permitted.

12. Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

[Include this paragraph on plagiarism-checking software only if relevant. If not relevant delete the paragraph below]

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

[Include this paragraph on computer marked multiple-choice tests if relevant. If not relevant delete the paragraph below]

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

13. Use of Generative Artificial Intelligence (AI)

The use of Generative Artificial Intelligence (e.g. chatGPT¹) may be considered plagiarism if it is identical or nearly identical to existing work. Although it is not possible for us to ban students

¹ Remember there are also security and ethical concerns with using these services. They collect data on what you input. Although we will use publicly available data in class examples, if you input sensitive information, or protected data you have access to, this could put you at risk and/or be a violation of research and academic ethics.

from using AI to help explore a problem, if a student cannot explain, argue for, and defend the answers, text, and graphical representations used in a submission (via oral or written inquiry to the satisfaction of an instructor), the student will fail the assignment.

14. Western's Commitment to Accessibility

The Department of Geography and Environment strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website.

More information about "Accessibility at Western" is available.

15. Mental Health

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit Western's Health and Wellness website for more information on mental health resources.

16. Support Services

Western's Support Services
Student Development Centre
Indigenous Student Center

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

17. Important Dates

Monday January 5: Classes resume
Tuesday January 13: Last day to add a second term half course
Monday February 16: Family Day – Department Office Closed
February 16-20: Spring Reading Week (No classes; Department Office open)
Monday March 30: Last day to drop a second term half course
Thursday April 9: Classes end
April 10 and 11: Study days
April 12-30: Examination Period