

Western University
Department of Geography and Environment
GEOG 2210B: Introduction to Statistics for Geographers
Course Outline: Section 001 Winter 2021
Syllabus subject to change



Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

1. Course Information

1.1. Classroom Location:

Lecture Location and Time: Section 001: Distance Studies/Online/Asynchronous
Lab Location and Time: Section 002: in-person, SSC 1059, Tuesday, 12:30pm to 2:30pm
Section 003: in-person, SSC 1059, Wednesday, 9:30am to 11:30am
Section 004: in-person, SSC 1059, Wednesday, 2:30pm to 4:30pm

1.2. Contact Information:

Instructor: **Jacek Malczewski**

Office: Zoom meeting
Virtual office hour: by appointment via email
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Teaching assistant: **Ben Klar**

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Teaching assistant: **(Temitope) Oluwaseyi Ishola**

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Teaching assistant: **Vali Vakshoori**

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2. Calendar Description

2.1. Course Description

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

Antirequisite(s): Biology 2244A/B, Economics 2122A/B, Economics 2222A/B, Health Sciences 3801A/B, MOS 2242A/B, Psychology 2810, Psychology 2820E, 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, former Psychology 2885 (Brescia), former Statistical Sciences 2122A/B, former Social Work 2205.

Prerequisite(s): 1.0 course from Geography 1100, Geography 1300A/B, Geography 1400F/G, Geography 1500F/G, Geography 2131A/B, Geography 2132A/B, Geography 2133A/B, Geography 2142A/B, Geography 2152F/G, Geography 2153A/B, Environmental Science 1021F/G; or enrolment in the Major in Physical Geography or in an Honors Earth Science Program for Professional Registration

Prerequisite checking is the student's responsibility

2.2. Senate Regulations

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. Course Objectives and Format

This course introduces students to research design and methodology with a focus on data description and analysis. It presents the general concepts of conducting research with a focus on the key aspects of statistical analysis. The course emphasizes methods for analyzing qualitative and quantitative data by teaching the fundamental underpinnings of statistical analyses.

Mode	Dates	Time	Frequency
Virtual asynchronous	N/A	2	see Section 5.1
In-person (SSC#1059)	see Section 5.2	2	see Section 5.2

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#). (Using the right browser is important, especially when using different features integrated with OWL). If students need assistance, they can seek support on the [OWL Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

4. Learning Outcomes

By the end of the semester, you will:

- * Have a basic understanding of the fundamentals and theoretical underpinnings of statistical analysis.
- * Be able to utilize basic statistical methods.
- * Be able to critically evaluate the work of others who employ statistical methods.

5. Lecture and lab schedules

This is a hybrid online/in-classroom-based course that will cover theoretical and applied concepts through lectures, assignments, and readings.

Lectures: asynchronous online

Labs: Section 002: in-person, SSC 1059, Tuesday, 12:30pm to 2:30pm

Section 003: in-person, SSC 1059, Wednesday, 9:30am to 11:30am

Section 004: in-person, SSC 1059, Wednesday, 2:30pm to 4:30pm

5.1 Lecture Schedule

Lectures will be delivered asynchronously. New lectures will be released weekly. These will consist of pre-recorded PowerPoint/Audio Units that you may access from the Resources module on the OWL site.

Week #	Date	Lecture # and Topic	*Readings Walford (2011)
Week 1	Jan. 12-13	0. Course introduction	
Week 2	Jan. 19-20	1. Basic terms and concepts in statistics	Chapter 1 pp. 3-20 Chapter 2 pp. 21-43 Chapter 3 pp. 57-60
Week 3	Jan. 26-27	2. Descriptive statistics 1	Chapter 4, pp. 93-96, 100-103 Chapter 4, 118-121
Week 4	Feb. 2-3	2. Descriptive statistics 2	Chapter 4, pp. 124-130 Chapter 5, pp. 131-137
Week 5	Feb. 9-10	3. Sampling and distributions	Chapter 5, pp. 149-153, 158-171 Chapter 6, pp. 216-220
Week 6	Feb. 16-19	Reading Week	
Week 7	Feb. 23-24	4. Parametric tests	Chapter 6, pp. 175-192 Chapter 6, pp. 210-216
Week 8	Mar. 2-3	5. Non-parametric tests	Chapter 7, pp. 221-224, 226-232 Chapter 7, pp. 258-264
Week 9	Mar. 9-10	Sample mid-term questions	
Week 10	Mid-March	Mid-term test	
Week 11	Mar. 23-24	6. Correlation 1	Chapter 8, pp. 267-284
Week 12	Mar. 30-31	6. Correlation 2	Chapter 8, pp. 284-289
Week 13	Apr. 6-7	7. Regression	Chapter 9, pp. 299-321

*Walford N. (2011) *Practical Statistics for Geographers and Earth Scientists*

5.2 Lab Schedule

Labs will take place in SSC-1059. New lab assignments will be posted under the Assignment module on the OWL site 2 days before the scheduled lab date.

Week #	Date	*Lab Topic	Due Date (specific to assigned lab section)
Week 1	Jan. 12-13	No Lab	
Week 2	Jan. 19-20	No Lab	
Week 3	Jan. 26-27	No Lab	
Week 4	Feb. 2-3	No Lab	
Week 5	Feb. 9-10	No Lab	
Week 6	Feb. 16-17	No Lab - Reading Week	
Week 7	Feb. 23-24	Lab #1: Descriptive statistics	
Week 8	Mar. 2-3	No Lab	Lab #1 due
Week 9	Mar. 9-10	Lab #2: Hypothesis testing	
Week 10	Mar. 16-17	No Lab (Midterm test)	Lab #2 due
Week 11	Mar. 23-24	No Lab	
Week 12	Mar. 30-31	Lab #3: Correlation and regression	
Week 13	Apr. 6-7	No Lab	Lab #3 due

5.3 Textbook

Walford N. (2011) *Practical Statistics for Geographers and Earth Scientists*
Wiley – Blackwell. ISBN: 978-0-470-84915-6 (pbk.)

You can order the textbook through the Book Stores website and it will be available for you to pick up. Students not in residences can have their books shipped to them. Below is the link for the eBook version that you can also purchase through the Book Stores website.

<https://bookstore.uwo.ca/product/cebcodeid34646>

6. Evaluation

Evaluation Components	Percentage of Course Grade	Assignment Schedule
Lab Assignments	30%	Varied (see section 5.2)
Midterm Test	32%	Mid-March, TBD
Final Exam (<u>cumulative</u>)	38%	April 14-30, TBD

Note: Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course.

6.1. Examinations

The course material is cumulative. Therefore you should review lectures and readings weekly - do not expect success if you only study and practice before exams. This course is also problem-based and applied - you must do all exercises to fully understand the material and successfully complete the course. Students are responsible for material covered in the lectures and labs as well as the assigned chapters/sections in the textbook.

There will be a midterm test and a final examination. The mid-term test (1.5 hours) will be held in mid-March. The final examination (2 hours) will be scheduled during the examination period at the end of the winter term.

A make-up mid-term test will not be offered. The weight of a missed mid-term test will be transferred to the final exam.

6.1. Laboratory Exercises and Assignments

Late assignments without illness self-reports will be **subject to a late penalty.**

Late assignments with illness self-reports should be **submitted within 24 hours** of submission of the last illness self-report.

All lab assignments must be handed in via OWL before the allocated deadline for the student's assigned lab section. Late submissions will be penalized at a rate of 10% per day for the first seven days. A mark of 0% will be recorded if work is submitted more than a week late. Per day is defined each 24-hour period succeeding the allocated assignment deadline – not midnight. If you have genuine non-medical extenuating circumstances and will not be able to submit an assignment on time, you may submit a written request for an extension, clearly outlining why you should be granted an extension. This request must be submitted to the course instructor **at least seven days** before the assignment is due. These extensions are not guaranteed and do not apply to the mid-term test and final exam.

6.3. Academic Consideration for Student Absence

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](#).

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the term, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors **within 24 hours** of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are**

not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.

For Western University policy on Consideration for Student Absence, see

[Policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs](#) and for the Student Medical Certificate (SMC), see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

6.4. Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the [Western Multicultural Calendar](#).

7. Use of Electronic Devices

No electronic devices, excepting calculators, will be allowed during examinations.

A reasonable quality calculator is required for the examinations. One with statistical functions may be most useful for this course, but any calculator with square root and square functions will suffice. It is your responsibility to know how to use your calculator, and to ensure its functionality during examinations.

8. Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

9. Statements concerning Online Etiquette (if the lab classes will be delivered entirely online) In the case of contingency, the course will be changed from a hybrid to an entirely online format. To ensure the best experience for both you and your classmates, you will be asked to honor the following rules of etiquette:

- Please “arrive” to class on time
- Please use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- Ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- To minimize background noise, kindly mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- Unless invited by your instructor, do not share your screen in the meeting

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, use the “raise hand” function and wait for the instructor to acknowledge you before beginning your comment or question
- Remember to unmute your microphone and turn on your video camera before speaking
- Self-identify when speaking
- Remember to mute your mic and turn off your video camera after speaking (unless directed otherwise)

General considerations of “netiquette”:

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.
- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment. “Flaming” is never appropriate.
- Be professional and scholarly in all online postings. Cite the ideas of others appropriately.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

10. 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.

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>).

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.

11. Western’s Commitment to Accessibility

The Department of Geography 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.

12. 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.

13. Support Services

[Student Support Services](#)

[Student Development Services](#)

14. Important Dates

January 11: Classes resume

January 19: Last day to add a second term half course

February 15: Family Day – Department Office Closed

February 13 to February 21: Spring Reading Week (No classes; Department Office open)

March 15: Last day to drop a first term half course without penalty

April 2: Good Friday

April 12: Classes end

April 13: Study day

April 14 to April 30: Examination Period