

GEOG 2220A – Geographical Information Science I

Course Outline: Section 001 Fall 2024

1. Course Information

*Details about design and delivery of the course are listed below in Section 6



Classes Start	Fall Reading Week	Classes End	Study day(s)	Exam Period
September 5	October 14-20	December 6	December 7 & 8	December 9-22

September 13, 2024: Last day to add a second-term half course

October 14, 2024: Thanksgiving Holiday

November 30, 2024: Last day to drop a first term half course without penalty



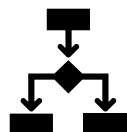
Course Instructor	Contact Information	Office Hours
Jed Long	Jed.long@uwo.ca	See OWL

Teaching Assistant(s)	Contact Information	Office Hours
Kathy Tang	OWL Discussion Forum	See OWL
Karen Vankerkoerle	OWL Discussion Forum	See OWL
Lauran Stoner	OWL Discussion Forum	See OWL
Hally Zhou	OWL Discussion Forum	See OWL
Cameron Stewart	OWL Discussion Forum	See OWL
Naeim Mijani	OWL Discussion Forum	See OWL



Office hours will be held in person

2. Calendar Description



An introduction to fundamentals and principles of Geographic Information Science, emphasizing both applied and theoretical aspects of digital mapping, spatial data handling, and spatial analysis using both vector and raster data. Practical skills are developed through the use of Geographic Information Systems.

2 lecture hours, 2 laboratory hours, 0.5 course

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



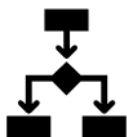
- Textbook:** Bolstad, P. (2019) GIS Fundamentals: A First Text on Geographic Information Systems, 6th Edition. XanEdu.
- Lab Manual:** Menke, K. (2019) Discover QGIS 3.x: A Workbook for Classroom or Independent Study. Locate Press.
- Additional Resources:** Any additional reading materials not included in the textbook will be made available via the course OWL site.

4. Course Objectives and Format

Course Objectives:

This course introduces students to both theoretical and applied foundations of Geographic Information Science. The objectives of the course are to:

- Familiarize students with the basic conceptual principles that underlie spatial data representation, handling, processing, and analysis in the digital environment of GIS (geographic information systems).
- Give students the opportunity to develop practical spatial data handling and analysis skills through hands-on GIS labs that guide students through a series of applied problem-solving tasks which demonstrate and implement the conceptual gleaned in lectures.



- Attendance is required
- Missed work should be completed in a timely manner

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. Course Content and Schedule

LECTURE CONTENT

Week	Dates	Topic	Readings
0	Sept 5-6	--	--
1	Sept 9-13	Overview What is GIScience?	Bolstad, Ch 1
2	Sept 16-20	Map Design Digital Maps	See OWL
3	Sept 23-27	GIScience in Research I	
4	Sept 30-Oct 4	Spatial Data Structures & Models Where does GIS data come from?	Bolstad, Ch 2
5	October 7-11	Coordinate Systems & Projections What is GPS?	Bolstad, Ch 3
	October 14-18	READING BREAK	
6	October 21-25	GIScience in Research II	
7	October 28-Nov 1	Vector Data Open Data / Open Mapping	Bolstad, Ch 9
8	November 4-8	Vector Analysis Social Media & GIScience	Bolstad, Ch 9
9	November 11-15	Raster Data Remote Sensing	Bolstad, Ch 10
10	November 18-22	Raster Data Analysis GIS in Environmental Analysis	Bolstad, Ch 11
11	November 25-29	The Future of GIScience	See OWL
12	Dec 2-6	Review and Exam Preparation	



LAB CONTENT

Week	Dates	Topic	Assessment
0	Sept 5-6	--	--
1	Sept 9-13	Introduction to QGIS software	--
2	Sept 16-20	Digital Map Design	Lab 1
3	Sept 23-27	Digital Map Design	Lab 1
4	Sept 30-Oct 4	Working with Spatial Data	Lab 2
5	October 7-11	Working with Spatial Data	Lab 2
	October 14-18	READING BREAK	--
6	October 21-25	Coordinate Systems & Projections	Lab 3
7	October 28-Nov 1	Mapping Canadian Census Data	--
8	November 4-8	Working with Vector Data	Lab 4
9	November 11-15	Vector Data Analysis	Lab 5
10	November 18-22	Raster Data Analysis	Lab 6
11	November 25-29	Term Project Help	Term Project
12	Dec 2-6	Term Project Help	Term Project



6. Learning Outcome

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

- Understand in overview the fundamentals of geographic information, data models that underlie digital spatial representation, and how it is that spatial data are captured, stored, used, and disseminated;
- Identify and understand basic spatial data analysis methods, as well as the appropriateness of utilizing specific methods across different datasets and application contexts;
- Demonstrate a basic level of independent practical proficiency in handling, processing, analyzing, and representing spatial data in a digital software environment such as a GIS;
- Describe the principles that underlie positioning, positioning systems and map projections; and Understand some of the characteristics, availability, limitations, and potential pitfalls of using geospatial information across various domains of application.



7. Communication



- Students should check the OWL site prior to each lecture and lab
- Course updates will be provided on the OWL announcements
- This course will use the OWL Brightspace for ALL discussions
- The discussion forums will be monitored daily by instructors or teaching assistants
- Students should post all course-related content on the discussion forum so that everyone can access answers to questions
- For any other communication, the centrally administered **e-mail account** provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts [here](#).
- Further questions about the course should be sent to the course instructor with "GEOG2220:" in the subject line.

8. Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Format	Weight	Due Date
Labs	Lab questions & maps	60%	See Schedule
Term Project	Infographic Map	10%	Friday, December 6, 2024
Final Exam	Written	30%	TBD



All lab assignments are **due at 11:55 pm on the day BEFORE the start of the next Lab**. For example, if your lab is on Wednesday your Lab 1 will be due on Tuesday, the day before we start Lab 2. Note: some labs are given as two week labs and some are only one week labs. A full schedule of due dates will be posted on OWL.

All assignments must be submitted digitally via OWL assignments. All responses must be typed and uploaded in the format specified (e.g., pdf). All maps must be generated in colour. Student's names and student numbers must be on each assignments component.

The evaluation methods described in the course outline are essential requirements for the course.

Students are responsible for material covered in the lectures as well as the assigned chapters/sections in the text.

- 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

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, in accordance with information presented in this course outline.

Formal Documentation Designation statement:

Dr Long's Flexible Assignment Policy for GEOG2220:

Every student will be allowed to submit a Lab Assignment late one time. You will have up to 72 hours to get your assignment in late. THERE IS NO NEED to email the instructor, the TA will identify this the first time you submit late. No questions will be asked. Any additional extensions or longer extensions will require formal academic consideration, otherwise late penalty will apply.

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 schedule 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.

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.

If a student fails to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered and the maximum course load for that term reduced by the credit of the course(s) for which the final examination has been deferred. If permission for such a further deferral or other accommodation is not granted, a course grade based on an examination mark of zero (0) will be entered.

You can find the actual policy [here](#)]

11. Use of Electronic Devices

Electronic devices will be allowed during tests and examinations.

12. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.

1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively.
5. Connect with others. Try forming a study group and try meeting on a weekly basis for study and peer support.
6. Do not be afraid to ask questions. If you are struggling with a topic, check the online discussion boards or contact your instructor(s) and or teaching assistant(s).
7. Reward yourself for successes. It seems easier to motivate ourselves knowing that there is something waiting for us at the end of the task.



13. 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.

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](#)

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

September 5: Classes resume

September 13: Last day to add a first term half course

October 14: Thanksgiving Holiday – Department Office Closed

October 14-20: Fall Reading Week (No classes; Department Office open)

November 30: Last day to drop a first term half course or a full course without penalty

December 6: Classes end

December 7 and 8: Study days

December 9-22: Examination Period