

## **GEOG2232 WAB Intro GIS and Geomatics**

### **Course Syllabus**

#### **Course Description**

An introduction to the fundamental principles and techniques that comprise the field of geomatics, especially Geographic Information Systems (GIS). Topics include the collection and visualization of geographical data through various means, database construction and manipulation, and exposure to analog and digital spatial technologies, such as GPS, surveying and digital aerial photography.

**Credit weight:** 0.5. **Type C:** Engineering, Mathematical and Natural Sciences

#### **Faculty Information**

Lisa TUTTY

(Lecturer) Email: [LTUTTY@lakeheadu.ca](mailto:LTUTTY@lakeheadu.ca) (use *your* College or University email please)

Student hours online: Tuesday 8-11am and Thursday 8-11am

#### **Course Learning Outcomes**

The course is intended to provide you with some experience of how to represent various types of spatial data in the form of visual displays which more readily communicate information than raw data. In addition you will be given grounding in GIS principles and techniques to spatial data analysis that can lead to further study in this useful field. At the end of this course you will be more sensitive to the value of a cartographically sound map and will have been initiated into the world of GIS.

- introduction to raster and vector-based GIS;
- develop a working knowledge of ArcGIS software;
- learn the underlying principles of GIS database construction;
- learn to diagnose and manage errors associated with GIS; and
- learn common spatial data analysis techniques.

Program information is on the Desire to Learn (D2L) Lakehead University-Georgian College partnership course shell. Students are encouraged to review the program information.

#### **Class Schedule**

This class is *asynchronous*, so you can do it each week at your most preferred time, and I am available online on both Tuesdays and Thursdays from 8-11am for live assistance.

**Winter 2021 Term**

No classes on: Monday, February 15, 2021 (Family Day)  
 Monday, February 15, 2021 - Friday, February 19, 2021 (Study Week)  
 Wednesday, April 14, 2021 - Thursday, April 15, 2021 (Winter Exam Study Break)  
 Friday, April 2, 2021 (Good Friday)  
 Monday, April 5, 2021 (Easter Monday)

Exam Period runs April 16 - 25, 2021 (10 days) (Includes two weekends), with Monday, April 26, 2021 as a contingency date. This course will have an assigned time period for an exam. Further details to be released.

**Evaluation/List of Assessments**

<p><b>Weekly lab assignments</b></p> <ul style="list-style-type: none"> <li>Most of our time and effort in this course is spent on lab work, because in GIS we learn by doing, not by reading about it or hearing about it. The late penalty for labs is 10% per day, and none will be accepted after the marked labs are returned to your classmates.</li> </ul>	<p><b>65%</b></p>
<p><b>Weekly quizzes</b></p> <ul style="list-style-type: none"> <li>These 11 quizzes will test you on both lab and lecture concepts, they will be held on D2L. You cannot do makeup quizzes (or be excused) for any missed quizzes for any reason as each is available online for <i>at least</i> a week, but I will drop the two lowest quiz marks for each student at the end of the semester to allow for illness, late enrollment, Accessibility concerns, etc.</li> </ul>	<p><b>15%</b></p>
<p><b>Final exam</b></p> <ul style="list-style-type: none"> <li>This will be a lab exam, and it will test you on your ability to apply the concepts and skills that you have learned in the lab to real life data</li> <li><i>Typically</i> for this course you will have a two day window in which to complete the exam, i.e. you can write it at any time during that two day window</li> </ul>	<p><b>20%</b></p>
<p><b>Total</b></p>	<p><b>100%</b></p>

A+	90 to 100%	Outstanding understanding of the course concepts including integration of materials and ideas, ability to apply knowledge to situations
A	80 to 89%	Above average to excellent knowledge, ability to apply knowledge to situations
B	70 to 79%	Satisfactory knowledge including ability to recognise and apply major course concepts, and to progress to next level of course
C	60 to 69%	Some grasp of course concepts; will likely encounter difficulty with higher levels
D	50 to 59%	Failed to meet minimum requirements of the course
E	40 to 49%	Failure
F	1 to 39%	Failure resulting from academic dishonesty
F	0	

This table is from the Lakehead University calendar and it explains what each marks range represents. The C range is an average student, B is *above average*, and A range is *outstanding*.

### Course Resources

Course textbooks - Normally we would use the textbook "Introduction to Geographic Information Systems, 9th Ed" by Chang (2019) for this course, but I figure that you already have enough expenses during the pandemic. So, while you are welcome to use that textbook if you like, you could also choose to use this free (open-source) textbook: "Geospatial Analysis" by de Smith, Goodchild, and Longley (2020) available here:

<https://spatialanalysisonline.com/HTML/index.html> or this other free one:

<https://2012books.lardbucket.org/books/geographic-information-system-basics/index.html> I

don't test on textbook material in this class, these textbooks are suggested only as an optional resource for you.

## Sequence of Topics

*This is a tentative schedule of topics and is subject to change. The faculty reserves the right to change/alter the schedule of topics from time to time.*

Please note: Jan 22<sup>nd</sup> 2021 is the final date to add courses. All due dates fall after this date for that reason.

Week/Date	Key Topics	Assignments/Tests
One Jan. 11 - 15	<ul style="list-style-type: none"> <li>Introduction, databases</li> </ul>	<i>Quiz 1 due: T26Jan</i> <i>Lab 1 (online GIS) due: F29Jan</i>
Two Jan. 18 - 22	<ul style="list-style-type: none"> <li>Map projections</li> </ul>	<i>Quiz 2 due: T2Feb</i> <i>Lab 2 (intro to ArcCatalog and ArcMAP) due: F5Feb</i>
Three Jan. 25 - 29	<ul style="list-style-type: none"> <li>Co-ordinate systems</li> </ul>	<i>Quiz 3 due: T9Feb</i> <i>Lab 3 (accessing spatial datasets) due: F12Feb</i>
Four Feb. 1 - 5	<ul style="list-style-type: none"> <li>Raster data</li> </ul>	<i>Quiz 4 due: <b>T23Feb</b></i> <i>Lab 4 (projections) due: <b>F26Feb</b></i>
Five Feb. 8 - 12	<ul style="list-style-type: none"> <li>Vector data</li> </ul>	<i>Quiz 5 due: <b>T23Feb</b></i> <i>Lab 5 (raster) due: <b>F26Feb</b></i>
Feb. 15 - 19	Reading Week	
Six Feb. 22 - 26	<ul style="list-style-type: none"> <li>Editing spatial data</li> </ul>	<i>Quiz 6 due: T2Mar</i> <i>Lab 6 (georeferencing) due: F5Mar</i>
Seven March. 1 - 5	<ul style="list-style-type: none"> <li>Geocoding</li> </ul>	<i>Quiz 7 due: T9Mar</i> <i>Lab 7 (cottage) due: F12Mar</i>
Eight March 8 - 12	<ul style="list-style-type: none"> <li>Overlay &amp; Vector analysis</li> </ul>	<i>Quiz 8 due: T16Mar</i> <i>Lab 8 (geocoding) due: F19Mar</i>
Nine March 15 - 19	<ul style="list-style-type: none"> <li>Terrain and Raster analysis</li> </ul>	<i>Quiz 9 due: T23Mar</i> <i>Lab 9 (geoprocessing I) due: F26Mar</i>
Ten March 22 - 26	<ul style="list-style-type: none"> <li>Buffer and Least cost path analysis</li> </ul>	<i>Quiz 10 due: T30Mar</i> <i>Lab 10 (geoprocessing II) due: F2Apr</i>
Eleven March 29 - April 6 <b>Good Friday – No classes Fri., April 2</b>	<ul style="list-style-type: none"> <li>Jobs in GIS</li> </ul>	<i>Quiz 11 due: T6Apr</i> <i>Lab 11 (geoprocessing III) due: F9Apr</i>
Twelve April 5 - 13 <b>Easter Monday – No classes Mon. April 5</b>	<ul style="list-style-type: none"> <li>No lecture</li> </ul>	<i>Practice lab test (optional, not graded)</i>
Exam Period April 16 - 25, 2021 (10 days)		<b><i>Final Exam (20%)</i></b>

Final day of classes (Lakehead University Academic Schedule) is Tuesday, April 13, 2021.

### Expectations for Successful Participation

1. Attend every class (they are available online, so you can watch each week at your own pace).
2. Check myCourseLink regularly for announcements, reading and work assignments and course updates.
3. Ask questions if you need clarification (in student hours T and R 8-11am; or via email). Please ensure that you “sign” your email with your name and course number and send the email from your University account – I am teaching multiple courses.
4. Keep up with your course work. Read the designated material and complete the assigned labs so that you can stay on top of it each week. Things will snowball quickly if you let your coursework slide in GIS class.
5. Submit your assignments by the deadline! You are strongly advised not to wait until the last minute to submit your assignments in case you have computer problems. Ten percent per day late penalty is a steep penalty, best to submit your labs on time.

### Academic and Student Code of Conduct Policies

- Academic and student policies and procedures for those enrolled in the Lakehead-Georgian programs can be found on the [Lakehead-Georgian Student Portal](#).
- All Lakehead-Georgian programs will follow the Lakehead Regulations as list in the Lakehead University [Academic Calendar](#) (<http://csdc.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&loaduserredits=False>). The University Regulations include but are not limited to Registration, Examinations, Reappraisals and Academic Appeals, Special Examinations, Academic Misconduct, Withdrawal, and Timely Feedback. Additional Faculty Regulations may also apply. Please review the Academic Calendar.
- The Lakehead University [Student Code of Conduct - Academic Integrity](#) (<https://www.lakeheadu.ca/students/student-life/student-conduct>) will apply to all Lakehead-Georgian students regardless of campus of study.
- The Lakehead University [Student Code of Conduct - Appeals](#) (<https://www.lakeheadu.ca/students/student-life/student-conduct>) will apply to all Lakehead-Georgian students regardless of campus of study.
- The Georgian College [Student Code of Conduct](#) (<http://www.georgiancollege.ca/student-code-of-conduct/>) will apply to the Lakehead-Georgian students studying at the Barrie campus. Additional campus policies of [Sexual Violence Procedure and Protocol](#) (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/sexual-violence>), Alcohol, Drugs and Tobacco (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/alcohol-drugs-and-tobacco>), and [Information Technology Acceptable Use Procedure](#)

(<http://www.georgiancollege.ca/wp-content/uploads/2-117IT-acceptable-use.pdf>) also apply.

- The Lakehead University [Student Code of Conduct – Non-Academic](https://www.lakeheadu.ca/students/student-life/student-conduct) (<https://www.lakeheadu.ca/students/student-life/student-conduct>) will apply to the Lakehead-Georgian students studying at the Orillia campus.

### Plagiarism and Academic Dishonesty

A breach of Academic Integrity is a serious offence. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should view the [Student Code of Conduct -Academic Integrity](https://www.lakeheadu.ca/students/student-life/student-conduct) (<https://www.lakeheadu.ca/students/student-life/student-conduct>) for a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

### Whom to Contact

STUDENT ADVISING (NON-ACADEMIC)	
Becca Allan Advisor, Accessibility and Academic Success Services	Tel: 705-728-1968, Ext. 5373 <a href="mailto:Becca.Allan@GeorgianCollege.ca">Becca.Allan@GeorgianCollege.ca</a> (Georgian, Barrie) Room A143L

ENVIRONMENTAL SUSTAINABILITY		
<b>Lakehead University</b> Department Chair	Dr. Sreekumari Kurissery	Tel: 705-330-4008, Ext. 2629 <a href="mailto:skurrisse@lakeheadu.ca">skurrisse@lakeheadu.ca</a> (Lakehead, Orillia) Room OA 3010
<b>Georgian College</b> Program Coordinator	Samantha Sullivan Sauer	Tel: 705-728-1968, Ext. 6280 <a href="mailto:samantha.sullivansauer@georgiancollege.ca">samantha.sullivansauer@georgiancollege.ca</a> (Georgian, Barrie) Room A143K
<b>Georgian College</b> Program Assistant	Jacqueline Huggard	Tel: 705-728-1968, Ext. 5225 <a href="mailto:jacqueline.huggard@georgiancollege.ca">jacqueline.huggard@georgiancollege.ca</a> (Georgian, Barrie) Room A143L

SCIENCE LABORATORY SUPPORT		
<b>Lakehead University</b> Laboratory Technician	Chase Moser	Tel: 705-728-1968, Ext. 1839 <a href="mailto:cmoser@lakeheadu.ca">cmoser@lakeheadu.ca</a> (Georgian, Barrie) Room A143Q

### Student Services and Supports

**Student Advisors** (<https://georgiancollege.sharepoint.com/sites/student/Student-Services/StudentAdvisors/SitePages/Home.aspx>)

- Help students build both academic and personal resilience so that they can flourish at Georgian and beyond
- Provide individual, group and web-based advising sessions
- Are housed within the academic areas
- To book an appointment with your advisor go to the **Student Portal (preferred)** or call **705-728-1968 Ext. 1307**

#### **Library** (<http://library.georgiancollege.ca/main>)

##### Customer Service

- Off campus access

##### Research help

- Help finding books, articles and credible sources.
- Using specialty databases.
- Creating a search strategy.

#### **Academic Success** (<https://library.georgiancollege.ca/help/contact-academic-success/>)

#### **Writing Centre** ([http://library.georgiancollege.ca/writing\\_centre](http://library.georgiancollege.ca/writing_centre))

- Improve your writing.
- Help with citing sources and laying out your paper.

#### **Math Centre** ([http://library.georgiancollege.ca/math\\_centre](http://library.georgiancollege.ca/math_centre))

- Make sense of math questions.
- Understand concepts and develop skills.

#### **Tutors** (<http://library.georgiancollege.ca/tutoring>)

- Further understand course content.
- Build your study practices.

#### **Accessibility Services** (<https://www.georgiancollege.ca/student-life/student-services/accessibility-services/>)

If you are a student experiencing a disability who may require academic accommodations and have not yet registered with Accessibility Services, please contact their office at 705-722-1523, email [studentsuccess@georgiancollege.ca](mailto:studentsuccess@georgiancollege.ca), or visit their offices in B110. You must be registered with Accessibility Services to access academic accommodations. Support for those students whose success at college may be affected by a disability include:

- Ongoing support from our Accessibility Advisors including arranging a confidential psychoeducational assessment where required
- Training in the use of specialized computer technology
- Classroom and test accommodations

#### **Testing Services** (<http://www.georgiancollege.ca/student-life/student-services/testing/>)

- Accommodated testing

- Missed/Makeup testing
- Proctoring services are also available for external and Ontario Learn exams

**Counselling** (<http://www.georgiancollege.ca/student-life/student-services/counselling/>)

- Free, confidential counselling is available to all students
- Walk in counselling is available on a daily basis Monday to Friday

**Career Success** (<http://www.georgiancollege.ca/student-life/student-services/co-op-and-career-services/>)

Career assessments and exploring options

- Job search workshops
- Labour market information
- Resume/cover letter help
- Interview practice
- Graduate employment information
  - Links to job postings and online resource

### **Campus Safety and Security Syllabus Addendum**

**Emergency Evacuation** (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/fire>)

- Evacuate buildings when a fire alarm is activated or an official announcement is given. Review [evacuation guidelines](https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/fire). (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/fire>)
- Students requiring assistance in emergency situations must inform their faculty during the first week of class.
- Familiarize yourself with all fire exit doors of classrooms and buildings you may occupy.
- Do not re-enter a building until instructions are given by the Fire Department or college personnel.

**Lockdown** (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/lockdown>)

- Lockdown is initiated when there is a potential or actual violent incident on campus that could result in a serious injury or threat to life.
- Students can download the new Safe@Georgian app to stay updated on Campus Safety and Security information including lockdown.
- Familiarize yourself with the [College Lockdown procedure](https://www.georgiancollege.ca/wp-content/uploads/Lockdown.pdf) (<https://www.georgiancollege.ca/wp-content/uploads/Lockdown.pdf>)
- Lockdown tests occur each semester.

### **Resources:**

- [Get Out, Hide, Fight Lockdown Video](http://youtu.be/JA8cckMbVDk) (<http://youtu.be/JA8cckMbVDk>)



- [Lockdown quick reference sheet \(http://www.georgiancollege.ca/wp-content/uploads/COM-15-416\\_LockdownProcedure\\_Signage\\_FVR3\\_print.pdf\)](http://www.georgiancollege.ca/wp-content/uploads/COM-15-416_LockdownProcedure_Signage_FVR3_print.pdf)
- Lockdown Model – Get Out, Hide, Fight: Lockdown Tools and Tactics and FAQs.

**Unscheduled Campus Closure** (<https://www.georgiancollege.ca/about-georgian/campus-safety-services/tab/campus-closures>)

**Resources:**

- [How to find out if your campus is closed \(http://www.georgiancollege.ca/about-georgian/campus-safety-services/#how-to-find-out-if-your-campus-is-closed\)](http://www.georgiancollege.ca/about-georgian/campus-safety-services/#how-to-find-out-if-your-campus-is-closed)
- [Unscheduled Campus Closure Procedure \(https://www.georgiancollege.ca/wp-content/uploads/2-102Unscheduled-college-closure-2018.02.10.pdf\)](https://www.georgiancollege.ca/wp-content/uploads/2-102Unscheduled-college-closure-2018.02.10.pdf)

**Timing of Closures/Notification:**

Closure	Decision	Communication / Notification*	Notes
<b>College has made the decision to close a campus or location <u>in the morning</u>:</b>	6:00 a.m.	By 6:30 a.m.	If re-opening for noon or evening classes is being considered, this will be mentioned in the message
<b>College closes a campus(s) in the morning and <u>expects to re-open by 12:00 noon</u></b>	9:30 a.m.	By 10:00 a.m.	Only affects classes beginning at 12 noon or later
<b>Closure expected to continue <u>past 12:00 noon</u></b>	9:30 a.m.	By 10:00 a.m.	
<b>College intends to <u>re-open for evening classes</u> which commence at 5 p.m. or later</b>	2:30 p.m.	By 3:00 p.m.	
<b>College intends to <u>NOT re-open for evening classes</u>:</b>	2:30 p.m.	By 3:00 p.m.	

**\*Notification will be made via:**

- Georgian social media (Facebook, Twitter)
- Safe@Georgian app
- Georgian website (homepage)
- Recorded message when you call into Barrie campus at 705-728-1968
- Student or employee portal
- Georgian email account
- Radio and television announcements through local and regional media

Note: We only announce the names of campuses that are closed. If your campus is not named in a closure, it's open.