

# GEOG2232 Intro to 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)

Office hours: A110 Wednesdays 5-6pm (by prior appointment)  
Phone: 705.330.4008 x 2710 (Orillia office)  
Email: LTUTTY@lakeheadu.ca

### 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:

Lecture	Fridays	12:00-2:00	A110
Lab	Wednesdays	2:00-5:00	A110

No classes on: Reading Week: February 25 to March 1, 2019

Exam Period runs April 10<sup>th</sup>, 2019 to April 18<sup>th</sup>, 2019 with April 20<sup>th</sup>, 2019 as a contingency day. This course will have an assigned time period for an exam. Further details to be released.

## Evaluation/List of Assessments:

**Midterm test 1** FRIDAY FEBRUARY 8<sup>TH</sup> IN CLASS – 10% \*\*\*See note below

(multiple choice/'true and false'/'mix and match' + short answer)

**Midterm test 2** FRIDAY MARCH 8<sup>TH</sup> IN CLASS – 10% \*\*\*See note below

(multiple choice/'true and false'/'mix and match' + short answer)

**Lab Exercises** WEEKLY – 50% (during lab time and on your own time)

**Examination** – 30% \*\*\*See note below

(multiple choice/'true and false'/'mix and match' + short answer + long answer) Date/time will be scheduled by the University

*All tests and the examination will be held in an examination room setting (NOT online).*

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

Mark descriptions from Lakehead University. Students are advised to refer to the University Calendar to ensure that they have adequate grades and/or average to proceed in their program. Grades in this course are numerical (not letters).

**Textbook:** Chang, K., 2016. Introduction to Geographic Information Systems, 8<sup>th</sup> Edition (New York, NY: McGraw-Hill). Connect online access will allow you to do practice quizzes which are quite helpful.

[http://connect.mheducation.com/class/l-tutty-barrie\\_2019](http://connect.mheducation.com/class/l-tutty-barrie_2019)

But you need to buy the Connect access with your (new) textbook if you want it.

Course textbooks can be ordered online through the [Lakehead University bookstore](http://bookstore.lakeheadu.ca/home) (<http://bookstore.lakeheadu.ca/home>). Purchases can be shipped to student home address or Georgian College bookstore on Barrie Campus. For more information, contact [Lakehead University bookstore](http://bookstore.lakeheadu.ca/contact-us) (<http://bookstore.lakeheadu.ca/contact-us>).

## 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.*

	Lecture	Lab	Reading
Week of Jan 7	Introduction, databases	Online GIS: ArcGIS Online	Ch 1
Week of Jan 14	Map projections	Intro to ArcCatalog and ArcMAP	Ch 2.1-2.3
Week of Jan 21	Co-ordinate systems	Accessing Spatial Datasets	Ch 2.4-2.5
Week of Jan 28	Raster data	Projections	Ch 4
Week of Fe 4	<b>Midterm Test 1 (Fri Fe 8)</b>	Raster	
Week of Fe 11	Vector data	Georeferencing	Ch 3
Week Fe18	<i>Spring Break</i>		
Week of Fe 25	Editing spatial data	Creating a map	Ch 5
Week of Mar 4	Geocoding	Geocoding: Google and ArcGIS	Ch 7
Week of Mar 11	<b>Midterm Test 2 (Fri Mar 8) covers material post midterm 1</b>	Query and editing	
Week of Mar 18	Overlay & Vector analysis	Geoprocessing I	Ch 11 ( <i>not</i> 11.1)
Week of Mar 25	Terrain & Raster analysis	Geoprocessing II	Ch 12, 13
Week of Apr 1	Buffer & Least cost path analysis	Geoprocessing III	Ch 11.1, 17
<b><u>EXAM will be scheduled by the University. It focuses strongly on material from post midterm 2</u></b>			

Final day of classes is April 8<sup>th</sup>, 2019.

## Expectations for Successful Participation:

1. Attend every class (and if you cannot, ask a learning partner to help you catch up).
2. Check D2L regularly for announcements, reading and work assignments and course updates.
3. Ask questions if you need clarification (in class; via email; or by telephone). Email will receive a speedier response to questions than leaving a voicemail message. Please ensure that you “sign” your email with your name and course number.
4. Keep up with your course work. Read the designated material and complete the assigned homework so that you can come to class prepared to discuss the issues and concepts during class time.
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.

### **Course policies on lateness and absence:**

Late submissions for lab exercises may be accepted however the late penalty is 10% per day, including weekends. No late submissions after your classmates assignments have been marked.

**\*\*\*Important note:** if you miss one midterm test and receive consideration for it then the 10% will be redistributed to the other midterm test (5%) and the final exam (5%) as I do not do rewrites. If you miss both midterm tests or one of them and the final exam then you can NOT pass this course because you have simply missed too much material.

**Absences and lateness:** You may receive consideration for your late work (meaning no late penalty) if you submit the **Certificate of Illness or Incapacitation** (for all health related concerns) or an appropriate piece of documentation for other excuses (ex. certification from the funeral home for the death of a close relative). The proper documentation must be received as soon as possible after the missed deadline. For absences from a midterm test for reasons of illness use the **Certificate of Illness or Incapacitation**, for compassionate reasons or representing the university off-campus you will require written documentation in order to be receive *potential consideration* for a marks redistribution (midterm) or assignment extension. The late penalty for assignments (without consideration as described above) is 10% per day late, including weekends. Late assignments should be submitted to Lisa via the D2L website. You may email copies of your documentation to Lisa but must submit proper paper copies when you return to class.

**Missed Examinations Due to Illness:** In cases where a student misses a formal examination due to an incapacitating illness, the student must have the **Certificate of Illness or Incapacitation** completed by a Medical Professional and submit the completed form to Enrolment Services no later than three (3) working days after the date of the original final examination. The **Certificate of Illness or Incapacitation** must be dated as seen by the Medical Professional no later than one (1) working day after the examination.

In other exceptional circumstances, official supporting documentation must be provided (e.g. copy of a death certificate or letter from the funeral home).

The **Certificate of Illness or Incapacitation** is the acceptable documentation for illness. It is available at:

[https://www.lakeheadu.ca/sites/default/files/forms/Certificate%20of%20Illness\\_Incapacity.pdf](https://www.lakeheadu.ca/sites/default/files/forms/Certificate%20of%20Illness_Incapacity.pdf)

**Please see the following for important information about missed exams:**

<https://www.lakeheadu.ca/studentcentral/exams-grades/missed-exam-medical-personal>

### **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 D2L.

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&catalogid=24&chapterid=6347&loaduseredits=False>). The University Regulations include but are not limited to Registration, Examinations, Reappraisals and Academic Appeals, Special Examinations, Academic Misconduct, Withdraw, and Timely Feedback. Additional Faculty Regulations may also apply. Please review the Academic Calendar.

The Lakehead University [Code of Student Behaviour and Disciplinary Procedures](https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures) as applied to Academic Misconduct will apply to all Lakehead-Georgian students regardless of campus of study (<https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures>).

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 (<http://www.georgiancollege.ca/student-code-of-conduct/>). Additional campus policies of [Sexual Violence Procedure and Protocol](http://www.georgiancollege.ca/wp-content/uploads/GeorgianSexualViolenceProcedureMarch31final.pdf) (<http://www.georgiancollege.ca/wp-content/uploads/GeorgianSexualViolenceProcedureMarch31final.pdf>) and [Information Technology Acceptable Use Procedure](http://www.georgiancollege.ca/wp-content/uploads/2-117IT-acceptable-use.pdf) (<http://www.georgiancollege.ca/wp-content/uploads/2-117IT-acceptable-use.pdf>) also apply.

The Lakehead University [Code of Student Behaviour and Disciplinary Procedures](https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures) as applied to Non-Academic Misconduct will apply to the Lakehead-Georgian students studying at the Orillia campus (<https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures>).

### **Plagiarism:**

Plagiarism and academic dishonesty: Plagiarism is an extremely serious academic offence and carries penalties varying from failure in an assignment to debarment from the University. As noted in the University Calendar ([University Regulation IX Academic Misconduct](http://csdc.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=24&chapterid=6364&loaduseredits=False)): (<http://csdc.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=24&chapterid=6364&loaduseredits=False>)

### **Academic Integrity:**

Academic integrity is fundamental to learning and scholarship at Lakehead University. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. The University takes a most serious view of offences against academic honesty such as plagiarism, cheating and impersonation. Penalties for dealing with such offences will be strictly enforced.

The "Code of Student Behaviour and Disciplinary Procedures" including sections on plagiarism and other forms of misconduct may be found on the Lakehead University Senate website. See the Code under "Policies - Student Related" in the University Policies at [policies.lakeheadu.ca](http://policies.lakeheadu.ca).

### **Potential offences include, but are not limited to:**

#### **In papers and assignments:**

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.

- Obtaining or providing unauthorized assistance on any assignment including:
- Working in groups on assignments that are supposed to be individual work;
- Having someone rewrite or add material to your work while “editing”.
- Lending your work to a classmate who submits it as his/her own without your permission.

**On tests and exams:**

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else’s answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

**Misrepresentation:**

- Falsifying or altering any documentation required by the University, including doctor’s notes.
- Falsifying institutional documents or grades.

The following rules shall govern the treatment of candidates who have been found guilty of attempting to obtain academic credit dishonestly.

(a) The minimum penalty for a candidate found guilty of plagiarism, or of cheating on any part of a course will be a zero for the work concerned.

(b) A candidate found guilty of cheating on a formal examination or a test, or of serious or repeated plagiarism, or of unofficially obtaining a copy of an examination paper before the examination is scheduled to be written, will receive zero for the course and may be expelled from the University.

No formal division of the class into groups will be made for labs or assignments, though it is acknowledged you will likely work together at times. **Individual (and unique) submissions are expected for each lab exercise and assignment.** I expect you to read and understand the University's policy on plagiarism.

**Who to Contact:**

Student Advisor (ENSU, ECE) (non-academic)	Sonya Lem	<a href="mailto:sonya.lem@georgiancollege.ca">sonya.lem@georgiancollege.ca</a> Barrie Campus, Room A143/Library 705.728.1968 x1854
<b>Environmental Sustainability (ENSU)</b>		
Department Chair (Lakehead) and Professor	Dr. Sreekumari (Sree) Kurissery	<a href="mailto:skurisse@lakeheadu.ca">skurisse@lakeheadu.ca</a> Lakehead, Orillia Campus 705.330.4008 x2629
Program Lead (Georgian) and Professor	Samantha Sullivan Sauer	<a href="mailto:samantha.sullivansauer@georgiancollege.ca">samantha.sullivansauer@georgiancollege.ca</a> Barrie Campus, Room A143 705.728.1968 x6280



## Student Services and Supports:

### Advisors:

- First point of contact for transition support; ask any question and together we will find the answers!
- We will offer correct referrals and connections to the supports that you may need
- We can show you how to learn more effectively and efficiently with study skills including time and task management, note-taking, effective studying, giving a presentation and taking tests

([http://library.georgiancollege.ca/study\\_skills](http://library.georgiancollege.ca/study_skills))

Call **705.728.1968 ext. 1307** to book an appointment and meet your advisor.

### Learning Centres:

- Our Centres include (drop-in, telephone, skype and 1:1 appointments)
- **Writing Support** ([http://library.georgiancollege.ca/writing\\_centre](http://library.georgiancollege.ca/writing_centre))
  - Get free help with your writing assignments!
  - Create outlines for assignments and work on sentence structure and paragraph development
  - Access resources to check your references (e.g. APA or MLA)
- **Math Support** ([http://library.georgiancollege.ca/math\\_centre](http://library.georgiancollege.ca/math_centre))
  - Get free help with math!
  - Make sense of math questions; Understand word problems; Work with formulae

### Peer Tutors:

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

Available to all students to facilitate understanding of course content. To find out more about one-on-one tutors, make an appointment with the Peer Services Advisor.

### Accessibility Services:

(<http://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 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
- Training in the use of specialized computer technology
- Classroom and test accommodations

### Library:

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

- Assignment Help (find books, articles and websites on your topic)

- Computer Help (Microsoft Office Suite, Blackboard, Banner)

### 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 counseling is provided to all students by phone and/or office appointments

- Counselors are on call every day of the week for urgent needs or students can book an appointment

### 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:

- Evacuate buildings when a fire alarm is activated or an official announcement is given. Review [evacuation guidelines](http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/fire--tab/). (<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/fire--tab/>)
- ***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:

- 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](http://www.georgiancollege.ca/wp-content/uploads/Lockdown.pdf) (pdf). (<http://www.georgiancollege.ca/wp-content/uploads/Lockdown.pdf>)
- Lockdown tests occur each semester. Fall 2017 date is scheduled for September 21, 2017.

### Resources:

- [Get Out, Hide, Fight Lockdown Video](http://youtu.be/JA8cckMbVDk) (<http://youtu.be/JA8cckMbVDk>)
- Lockdown Model – Get Out, Hide, Fight: [Lockdown Tools and Tactics and FAQs](http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/lockdown--tab/). (<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/lockdown--tab/>)

### Unscheduled Campus Closure:

Reference: **Unscheduled [Campus Closure Procedure #2-102](http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/campus-closures-tab/)**. (<http://www.georgiancollege.ca/about-georgian/campus-safety-and-security/campus-closures-tab/>)



**Timing of Closures/Notification:**

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

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

- College web site
- Radio and television announcements through local and regional media
- College telephone system automated message
- Blackboard (not D2L)
- All student email to college accounts (not Lakehead email)
- Georgian College Facebook site
- Georgian College Twitter feed
- SAFE@Georgian app