Department of Geography – Orillia Campus.

GEOG 2232 "Introduction to Geomatics and GIS"

Winter 2019: January - April

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

Course objective: 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.

Lecture – Mondays and Wednesdays 10:30-11:30 in OA2008

Lab – Tues 2:30-5:30 in OA1002

Instructor: Lisa TUTTY BSc (hon) MSc. My last name rhymes with putty ☺

Contact information:

Email: ltutty@lakeheadu.ca *(that is an "L" for Lisa)*; please email using your lakeheadu email. You can generally expect a response within 48 hours.

Office hours: are in OR1037, this is on the main floor of the residence building.

Course website: through D2L (you will find lecture notes there, as well as much important information).

Course goals:

-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.

Marks breakdown:

Midterm test 1 WEDNESDAY FEBRUARY 6TH IN CLASS – **10% ***See note below**

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

Midterm test 2 WEDNESDAY MARCH 6TH 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).

Course schedule found on page 8.

A+ A	90 to 100% 80 to 89%	Outstanding understanding of the course concepts including integration of materials and ideas, ability to apply knowledge to situations
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, 8th 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-orillia_2019-1

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

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

Please see the following for important information about missed exams:
https://www.lakeheadu.ca/studentcentral/exams-grades/missed-exam-medical-personal

Student services:

Lakehead University has **counselling services, a nurse practitioner, and a naturopathic doctor** available, at the Wellness Centre-Orillia Campus the Centre makes appointments in person or by phone. Please contact the Centre at 705-330-4008 ext. 2115. The Wellness Centre is located in OA 1015.
https://www.lakeheadu.ca/current-students/student-services/or/health-and-wellness

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

Lakehead University has a **Student Accessibility Services (SAS)** office which provides support services and advocacy on behalf of students with disabilities. The SAS office is located in OA 1030 (Orillia Academic Building).

Phone: +1 (705) 330-4008 ext. 2103 Email: oraccess@lakeheadu.ca

Student Success Centre: They have advisors, tutoring and peer-assisted learning and are located on the first floor of Simcoe Hall in OR 1031. This includes help with writing and editing and math. If you have questions please call 1 (705) 330-4008 ext. 2118 https://www.lakeheadu.ca/current-students/student-success-centre/academic-support-zone/orillia

Lakehead University Library services: Use it to search for journal articles for your poster project for example http://library.lakeheadu.ca/

Technology Services Centre Helpdesk: TSC Helpdesk is the liaison between Lakehead University's IT services and users (Students, Faculty & Staff and by extension to guests and visitors). The principal purpose of the Helpdesk is to provide quick resolution to inquiries. https://www.lakeheadu.ca/faculty-and-staff/departments/services/tsc

Academic integrity – Code of student behaviour and disciplinary procedures. https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures

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.

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.

Neat 15 minute exercise from Cardiff University (Avoiding plagiarism):
https://ilrb.cf.ac.uk/plagiarism/tutorial/

	Lecture	Lab	Reading
Week of Jan 7	Introduction, databases	Online GIS: ArcGIS Online	Ch 1
Week of Jan 14	Map projections	Accessing Spatial Datasets I	Ch 2.1-2.3
Week of Jan 21	Co-ordinate systems MT1	Accessing Spatial Datasets II	Ch 2.4-2.5
Week of Jan 28	Raster data	Projections	Ch 4
Week of Fe 4	**Midterm Test 1 (Wednesday Fe 6)**	Raster	
Week of Fe 11	Vector data	Georeferencing	Ch 3
Week Fe18	*Spring Break*		
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	**Midterm Test 2 (Wed Mar 6) covers material post midterm 1**	Query and editing	
Week of Mar 18	Overlay & Vector analysis	Geoprocessing I	Ch 11 (*not* 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
EXAM will be scheduled by the University. It focuses strongly on material from post midterm 2			

***Schedule subject to change.**