

Division of Applied Science & Management
GEOG 250 / RENR 201
3 Credit Course
Winter, 2019



COURSE OUTLINE

GEOG 250 / RENR 201

Introduction to Geographic Information Systems (GIS) / Introduction to
Geomatics Technics

3 CREDITS

PREPARED BY: Cyrielle Laurent, GIS specialist

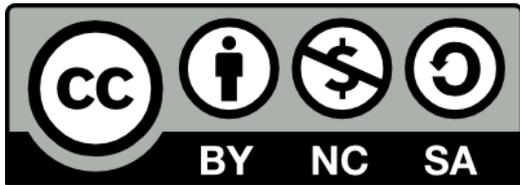
DATE: October 18, 2018

APPROVED BY: Margaret Dumkee, Dean

DATE: October 19, 2018

APPROVED BY ACADEMIC COUNCIL: June 20, 2018

RENEWED BY ACADEMIC COUNCIL:



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Introduction to Geographic Information Systems (GIS) / Introduction to Geomatics Technics

INSTRUCTOR: Cyrielle Laurent	OFFICE HOURS: By appointment
OFFICE LOCATION: YRC room NR32	CLASSROOM: A2204 and A2702(lab)
E-MAIL: claurent@yukoncollege.yk.ca	TIME: Monday 5:30-6:30pm optional tutorial Monday 6:30-9:30pm lecture Wednesday 6:30-9:30pm labs
TELEPHONE: 867-668-8849	DATES: January 7 - April 26, 2019

COURSE DESCRIPTION

This course provides an introduction to the fundamental theories and concepts behind Geographic Information Systems (GIS). The course content will include geographic concepts including basic cartography, projections, data creation, input, and editing, spatial data structures, basic spatial analysis, and practical applications of GIS. Laboratory exercises will complement the theory presented in the lectures. Participants will use a commercial GIS software package (ArcGIS) and gain a reasonable proficiency with that package.

Each lab will consist of a short lecture introducing important concepts and theoretical underpinnings, followed by hands-on modules to practice concepts talked about. The modules are designed to follow the text exercises. While the text contains exercises of a global nature to give a good grounding in various GIS resources and techniques, the modules are Yukon-centric, and will introduce students to Yukon resources and datasets.

PREREQUISITES

- Working knowledge of the Windows operating environment on PCs
- Basic understanding of mapped data
- Basic understanding of simple statistics

Note: students are encouraged to discuss their preparedness for this course with either instructor, but they can select themselves into the course if this is the only course they will take.

For students taking the course as RENR 201: Registration in Yukon College/University of Alberta BSc in Environmental and Conservation Sciences degree program.

EQUIVALENCY OR TRANSFERABILITY

This course is cross listed with the University of Alberta as RENR 201
See the website <http://bctransferguide.ca/> for a more complete list of transfers within British Columbia.
See the website <http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html> for information on transfers within Alberta.

LEARNING OUTCOMES

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

- understand how spatial data is input, organized, and analyzed in the GIS environment
- have an understanding of the nature of spatial data
- gain proficiency with a commercial GIS software package
- be familiar with issues related to implementing and managing GIS technology

COURSE FORMAT (3-3-0)

Lectures: Three hours per week.

Labs: Three hours per week.

Tutorial: One hour per week - OPTIONAL

Where appropriate, lectures will be supplemented by videos, class discussions, and technical demonstrations.

ASSESSMENTS:

Attendance & Participation

Attendance of lectures and labs is mandatory. Unauthorized absence for a lab period

will normally result in a zero mark for that lab. There is a weekly scheduled lab period (3 hours) that is a requirement. Laboratory exercises will require work outside of scheduled lab hours. Software used in this class is provided in certain computer labs at Yukon College.

Assignments and exams

Participants must pass BOTH THE LAB AND LECTURE PORTIONS in order to receive a passing grade for the course. In the lecture portion of the course there will be two assignments and a final examination. The laboratory mark will be based on participation and on weekly assignments (more details to be provided at the first lab session).

Students taking the course as RENR 201 must ensure that they are familiar with the University of Alberta's Academic Regulations governing missed and deferred final exams:

- a. A student who has missed a final exam because of incapacitating illness, severe domestic affliction or other compelling reason (including religious conviction) may apply for a deferred exam.
- b. To apply for a deferred exam, the student must complete a Faculty of ALES Deferred Final Examination Request Form, available for download from <http://www.ales.ualberta.ca/CurrentStudents/FormsPrograms.aspx>, as well as supporting documentation pertaining to the absence to their Faculty office. The request form and supporting documentation must be presented within two working days following the scheduled date of the exam missed, or as soon as the student is able, having regard to the circumstances underlying the absence.
 - i. Where the cause is incapacitating illness, the student must provide a University of Alberta Medical Statement Form, available for download from the Online Services section of www.registraroffice.ualberta.ca OR a Statutory Declaration form, available from a Commissioner of Oaths at the U of A Office of the Registrar.
 - ii. In other cases, including domestic affliction or religious conviction, adequate documentation must be provided to substantiate the reason for an absence. In the case of the death of a family member, the student should provide, if possible, a copy of the death certificate, or supplementary documentation such as an obituary or funeral program.
- c. A deferred exam will not be approved if a student
 - i. has not been in regular attendance where attendance and/or

- participation are required, and/or,
- ii. excluding the final exam, has completed less than half of the assigned work.
 - d. Students with two or more deferred exams outstanding from a previous term may be required to reduce the number of courses in which they are registered.
 - e. The student must seek the approval of the dean or designate of the student's Faculty on the application for a deferred final exam. If approved, students should refer to Academic Regulations Section 23.5.6 for details on writing deferred exams.
 - f. In the case of an approved application for deferred final exam, the student's Faculty will inform the Department responsible for the course of the approved deferred exam. The Department will then notify the instructor.

Tests

Tutorial

One hour of optional tutorial time is also available on a weekly basis. An instructor will be on hand during this time to assist students with lab assignments outside of the required lab time.

EVALUATION

Assignments	10%
Midterm Exam	20%
Labs	40%
Final Exam	30%
Total	100%

Assignment of grades

Grades will NOT be adjusted to fit a predetermined distribution. The total numerical score will be converted to a grade on the University of Alberta's letter grading system (for students enrolled in RENR 201) or on Yukon College's letter grading system (for students enrolled in GEOG 250).

Due Dates

The due dates provide by the teachers are to be respected. If a student cannot be present for an exam for a valid reason, arrangements must be made with the teacher

prior to the due date. If an assignment is not handed out on the due date without prior arrangement a mark of 0% will be given.

It is the responsibility of the students to inform the teachers of any absence to the lecture and lab class. Lab assignments will be due every week at the beginning of each class (on Wednesday)

REQUIRED TEXTBOOKS AND MATERIALS

- Longley, P., Goodchild, M., Maguire, D., and Rhind, D. (2005) Geographic Information Systems and Science, Third Edition. Wiley and Sons.
- Lab materials will be made available during the associated lab period.

Additional readings may be made available and assigned throughout the term

ACADEMIC AND STUDENT CONDUCT

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

PLAGIARISM

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the College.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon College recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon

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College program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukoncollege.yk.ca/yfnccr.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon College Academic Regulations (available on the Yukon College website). It is the student's responsibility to seek these accommodations. If a student requires an academic accommodation, he/she should contact the Learning Assistance Centre (LAC): lac@yukoncollege.yk.ca.

TOPIC OUTLINE

Week	Lecture		Lab	
1	Jan. 7	Academic housekeeping Introduction	Jan. 9	Exploring ArcMap
2	Jan. 14	Geospatial Relationships	Jan. 16	ArcCatalog and data management
3	Jan. 21	Georeferencing Projections	Jan. 23	Working with projections
4	Jan. 28	Cartography	Jan. 30	Creating a map
5	Feb. 4	Database management	Feb. 6	What can your data tell you?
6	Feb. 11	Mapping uncertainty Data collection	Feb. 13	Editing and creating data
7	Feb. 18-21 Reading week			
8	Feb. 25	Mid term exam	Feb. 27	Air photos Excel to GIS Term projects
9	Mar. 4	Geographic data modelling	Mar. 6	More complex maps
10	Mar. 11	GIS analysis	Mar. 13	Basic vector analysis
11	Mar. 18	GIS analysis	Mar. 21	Basic raster analysis
12	Mar. 25	Spatial Modelling	Mar. 27	Running models Term projects
13	Apr. 1	Topic TBD	Apr. 3	Term projects
14	Apr. 8	Exam review	Apr. 10	Exam practice
15-16	Exam weeks, dates TBD			