

GEOG*4480 Applied Geomatics, W18

Course content

This is a project-oriented course, focused on using geographic information systems (GIS) to address practical problems in resource management, planning (rural, urban or regional), or *any* other area where a spatial approach is appropriate. In addition to GIS project design and application, students will learn about and use various GIS functions, and will develop skills relating to data creation and manipulation, data quality assessment, and the presentation of the findings of analytical work.

Contact information

Course Instructor

Adam Bonnycastle, Hutt 231A, abonnyca@uoguelph.ca, 519-824-4120 ext. 53097

Teaching Assistants

- Jenelle White jwhite18@uoguelph.ca
- Anthony Francioni afrancio@uoguelph.ca

Meeting times

Lectures: Mondays, 7:00 pm – 9:50 pm, MCKN 225

Labs:

- Section 1: Tuesdays, 7:00 pm – 8:50 pm, HUTT 231
- Section 2: Wednesdays, 2:30 pm – 4:20 pm, HUTT 231

Approach

Most of the learning in the course will take place in a hands-on manner. Classroom sessions are used selectively to lay the foundation for project design and problem solving. The core of the course is a group project. The students in a team will identify a problem, design a solution, gather the necessary data, implement their solution, and present results. Labs are used to demonstrate techniques and approaches that will support your project.

What You Can Expect from the course

At the end of the course, you should have acquired the following:

- Knowledge on a wide range of GIS applications
- Ability to locate data sources for GIS applications and assess data quality
- Skills on processing real-world data for a GIS project
- Experience with project design and proposal writing
- Skills on GIS-based problem solving
- Experience preparing professional research reports and web publishing
- Presentation skills
- Enhanced teamwork skills

Prerequisite

- GEOG*3480 GIS and Spatial Analysis.
- Good computer skills are essential, as is familiarity with the ArcGIS software package used extensively in the course.

Evaluation

This section briefly describes assignments. Additional details are provided in separate handouts.

Item	Course Value
Labs (Individual, 5 x 3% each)	15%
Project proposal, first versions (Team, due January 29th ,)	15%
Project proposal, final version (Team, due February 12th ,)	20%
Project report, first version (Team, due March 19th ,)	20%
Project report, final version (Team, due April 2nd)	25%
Project presentation (Team, date to be determined)	5%

Labs

Five labs are scheduled for the course. The purpose is to familiarize you with computer setup, data preparation, GIS functions, and GIS modelling techniques that are essential for your course projects. **Attendance is mandatory.**

Project Proposal, First and Final Versions

The aim of the project proposal is to establish a firm foundation for the course project. The team should **review literature and extensively examine data** to develop a strong grasp both of the research problem being addressed, and of GIS implementation. The first version of the proposal should represent the best work that could be accomplished during the time available. By incorporating comments from the first version, teams will prepare the final version of the project proposal. Both versions of the proposal should be approximately 3,000 words in length.

Each group must meet with me *before* preparing the first version of the proposal to discuss your topic.

Project Report, First and Final Versions

The project report will take the form of a **web-based** summary of the problem, the research approach, and the findings. The first version of the report must be complete and polished; **it is not a rough draft!** Based on evaluation of the first version, teams will revise their reports to prepare the final report, which will be posted on the **Department of Geography Web Server**. Typically, the report should be approximately 3,000 words, not including tables and figures.

Project presentation

The purpose of the presentation is to share your research findings with your colleagues. The presentation should be concise and build on your project report.

Lab Fees (optional)

Each student may choose to purchase **\$10 allowance for printing** in the lab, which costs **15 cents per page** (colour and black-and-white).

CourseLink Page

This course has a [CourseLink](#) page that contains data sources, GIS resources, selected copies of overheads used in lectures, information about readings, and other useful materials. You can access the page from any computer that has a web browser. You'll also need Adobe Reader.

Office hours

Adam's office hours are 1 pm – 2 pm Tuesdays and Thursdays. You can drop by during my office hours without an appointment. ***On other days, I'd very much appreciate your respecting my work time by not stopping by unless you have an emergency.*** Of course, you can set an appointment with me or email/call to discuss.

Teaching Assistants

The TAs will provide instruction during lab periods and will be your primary contact for practical 'how-to' GIS advice for your projects. They will have office hours, to be posted, which will vary over the course of the semester in accordance with student work-load.

Student Responsibilities

Attendance at scheduled class meetings and lab sessions is mandatory. Furthermore, I expect that you will be prepared to participate in class discussions. Assignments must be submitted in class or lab sessions, on time. **Late assignments will be penalized at the rate of 10 percent per day, including Saturday and Sunday.** Students whose assignments are late because of valid

medical, psychological, or compassionate grounds will not be penalized. I may require a note from a physician or from Counselling Services (x53244).

Lab Safety

Safety in the computer laboratory (Room 231) is a priority at all times. In order to ensure safety of all participants, the safety procedures/guidelines provided by the instructor must be followed. It is the responsibility of each student to attend the safety orientation that is provided during the initial lab sessions.

Tentative Lecture Schedule

Week #	Topics / Activities (subject to change)	Assignment due in class/lab
1 January 8th	<ul style="list-style-type: none"> • Course overview • Data Resource Centre • Project overview • Choosing a project topic 	
2	<ul style="list-style-type: none"> • Group dynamics • Structure of the project proposal 	<ul style="list-style-type: none"> • Project groups formed in time for Monday lecture • Lab 01 due in lab session
3	<ul style="list-style-type: none"> • Project design • GIS applications 	Lab 02 due in lab session
4	<ul style="list-style-type: none"> • GIS applications • ArcGIS Model Builder 	Project proposal , first
5	<ul style="list-style-type: none"> • Project proposal (first version) feedback • Automating ArcGIS – an introduction to Python 	Lab 03 due in lab session
6	<ul style="list-style-type: none"> • GIS models and modelling 	Project proposal , final
February 19th	Reading Week, No Class/labs!! ☺	
7	<ul style="list-style-type: none"> • Project proposal (second version) feedback • GIS applications 	Lab 04 due in lab session
8	TBA	
9	TBA	
10	TBA	Project report , first
11	TBA (presentations?)	Lab 05 due in lab session
12	TBA (presentations?)	Project report , final

Standard Statements on University Policies

E-mail Communication

As per university regulations, all students are required to check their **@mail.uoguelph.ca** e-mail account regularly: e-mail is the official route of communication between the university and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or the teaching assistant in the case of a lab assignment) in writing (e-mail), with your name, id#, and e-mail contact. Where possible, this should be done in advance of the missed work or event, but otherwise, just as soon as possible after the due date, and certainly no longer than one week later. Note: if appropriate documentation of your inability to meet that in-course requirement is necessary, the course instructor, or delegate, will request it of you. Such documentation will rarely be required for course components representing less than 10% of the course grade. Such documentation will be required, however, for Academic Consideration for missed end-of-term work and/or missed final examinations. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Drop Date

The last date to drop one-semester Winter 2016 courses, without academic penalty, is Friday March 9th, 2018. For regulations and procedures for dropping courses, see the Undergraduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Accessibility Services as soon as possible.

For more information, contact Accessibility Services at 519-824-4120 ext. 56208 or email accessibility@uoguelph.ca or see the [Accessibility Services website](#)

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the

responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The [Academic Misconduct Policy](#) is detailed in the Undergraduate Calendar.

*An example of academic misconduct that might occur in this course is copy material from another student. **This includes graphic elements of map design.** Another example would be copying material for a report without properly and sufficiently citing the source of that material.*

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.