



COURSE OUTLINE
GIS Applications and Tools

Contact: ianoc@uvic.ca or 250-721-7338
Office Location: DTB B322
Office Hours: See CourseSpaces, *or by appointment*
Class Meetings: Tuesdays and Wednesdays 11:30 am to 12:20 pm
Location: DSB C108

Senior Lab Instructor: Jessica Fitterer jfitterer@uvic.ca

COURSE OBJECTIVES

- introduces the concepts and applications of geodatabases;
- consolidate understanding of fundamentals of geographic information;
- introduces concepts of Georeferencing;
- introduces Model Builder and Automation;
- Consolidates and develops Geoprocessing tools, and custom tool development;
- introduces concepts and techniques of Online Mapping.

LEARNING OUTCOMES

1. ability to employ GIS to solve wide ranging problems;
2. ability to use selected components of advanced GIS modeling applications
3. ability to customize online mapping products (ArcGIS Online)
4. ability to use model builder, geoprocessing tools, and scripts
5. skills and experience of a leading GIS platform (ArcGIS 10.5)
6. integration of diverse datasets and data models
7. development of presentation and report writing skills.

PRE-REQUISITES

Geography 222 and Geography 226

REQUIRED TEXT

There is no required textbook for this course, however weekly readings and online learning resources will be provided on CourseSpaces throughout the course.

EVALUATION

| | |
|---|-----|
| Midterm Exam (February 20 th in class) | 15% |
| Final Exam (During Exam period) | 45% |
| Laboratory Assignments (See below) | 40% |

Exam Format: The questions for the midterm exam and final exam will be based on lectures, posted learning resources and class discussion. The midterm test will cover only the topics discussed immediately preceding it. The final exam is comprehensive. Format includes a combination of short-answer and multiple-choice questions. **Electronic devices for use during exams are limited to non-graphing scientific calculators unless otherwise expressly permitted by the course instructor**

GRADING SYSTEM

As per the Academic Calendar:

| Grade | Grade point value | Grade scale | Description |
|------------------------------------|-------------------|-----------------------------|--|
| A+ A A- | 9 8 7 | 90-100% 85-89% 80-84% | Exceptional, outstanding and excellent performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter. |
| B+ B B- | 6 5 4 | 77-79% 73-76% 70-72% | Very good, good and solid performance. Normally achieved by the largest number of students. These grades indicate a good grasp of the subject matter or excellent grasp in one area balanced with satisfactory grasp in the other area. |
| C+ C | 3 2 | 65-69% 60-64% | Satisfactory, or minimally satisfactory. These grades indicate a satisfactory performance and knowledge of the subject matter. |
| D | 1 | 50-59% | Marginal Performance. A student receiving this grade demonstrated a superficial grasp of the subject matter. |
| F | 0 | 0-49% | Unsatisfactory performance. Wrote final examination and completed course requirements; no supplemental. |
| N | 0 | 0-49% | Did not write examination or complete course requirements by the end of term or session; no supplemental. |

GEOGRAPHY DEPARTMENT INFORMATION

Geography Department website: <http://geog.uvic.ca>

Undergraduate Advisor: Phil Wakefield geogadvisor@uvic.ca

Department Chair: Dr. Johannes Feddema geogchair@uvic.ca

COURSESPACES

CourseSpaces learning management systems (LMS) will serve as the main avenue of communication (<http://coursespaces.uvic.ca>). Please monitor the page on a regular basis for course announcements. If you are having difficulty logging in or password problems, contact the Computer Help Desk Email: helpdesk@uvic.ca, Tel: 250-721-7687

IMPORTANT COURSE POLICIES

A high level of student cooperation and participation, involving asking and answering questions is expected. Students are expected to attend all lectures, take notes and be punctual for class.

Cell phones and portable music players must be **turned off or silenced** during lectures.

Topic handouts based on lecture presentations will be provided before the beginning of class meetings on CourseSpaces. These handouts will be removed **7 days** after the posting date. Students are responsible for downloading/saving and completing notes packages. *If you miss any material, make arrangements to get handouts from a fellow student, not from the instructor.*

Students must complete all evaluation components to obtain credit. Failure to complete an any evaluation component without permission from the instructor, will result in an 'N' grade, which equals a Grade Point Value of 0.

Students will not be permitted to write make-up tests except for documented medical or compassionate reasons. Please inform the instructor of your situation promptly and present written proof within five working days. Any make-up test or examination may not follow the same format as the in-class one.

Lab assignments are due at the beginning of your lab section; thereafter late penalties will be applied. Late assignments will be penalized **25% per day** (including weekends and holidays). Exceptions will only be granted for documented medical or compassionate reasons. Written proof must be provided within **five** working days. *Only the course instructor can grant exceptions.*

Details regarding your labs and their marks are managed by the course Lab Instructors. Please discuss any issues or questions on labs with your Lab Instructor first. Any discrepancy with lab grades must be reported to your Lab Instructor, the Senior Laboratory Instructor, or the Course Instructor within **seven days** of receiving the marked assignment.

Please attend only the laboratory section for which you are registered. If you must miss a lab for exceptional circumstances, please make arrangements with your TA in advance to attend another section. This however does not change the due date of your lab assignment.

Conflicts with holidays or travel plans are not considered an acceptable reason to apply for a deferred examination or an assignment extension.

Unless otherwise stated students are expected to complete assignments **independently**.

PLAGIARISM

Academic dishonesty (plagiarism, cheating) is a very serious matter in any academic institution and is dealt with severely at the University of Victoria. *The responsibility of the institution:* Instructors and academic units have the responsibility to ensure that standards of academic honesty are met. By doing so, the institution recognizes students for their hard work and assures them that other students do not have an unfair advantage through cheating on essays, exams, and projects. *The responsibility of the student:* Plagiarism sometimes occurs due to a misunderstanding regarding the rules of academic integrity, but it is the responsibility of the student to know them. If you are unsure about the standards for citations or for referencing your sources, ask your instructor.

Infractions will be dealt with in accordance with University policy. Commonly, the penalty for any form of cheating/plagiarism is a grade of F on the tests or laboratory assignments, or a final grade of F in the course. However, depending on the severity of the case other penalties may include a record on the student's transcript or expulsion.

Please familiarize yourself with the University policy on academic integrity found in the Undergraduate Calendar at the following website. Please contact me if you have any questions.

<https://www.uvic.ca/learningandteaching/students/resources/expectations/>

ACCESSIBILITY

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations <https://www.uvic.ca/services/cal/> The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course. **Please note:** You are under no obligation to disclose.

POSITIVITY AND SAFETY

The University of Victoria is committed to promoting, providing and protecting a positive and safe learning and working environment for all its members. To ensure that all class members feel welcomed and equally able to contribute to class discussions, we will all endeavour to be respectful in our language, our examples, and the manner in which we conduct our discussions and group work. If you have any concerns about the climate of the class, please contact me.

Course Experience Survey (CES)

We value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (CES). The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. The survey is accessed via MyPage and can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.

Course Information

Lecture Topics Tentative Schedule

1. Databases and data collection
2. Georeferencing
3. Accuracy/Precision
4. Spatial Interpolations and Modeling
5. Geo-visualization
6. Suitability
7. Spatial Decision Making
8. Geoprocessing
9. Internet-based Mapping
10. Future of GIS

| Week | Dates | Lab | Due |
|----------|------------------------|----------------------------------|-------|
| 1 | Jan 1 – Jan 5 | No Lab | |
| 2 | Jan 8 – Jan 12 | Lab 1 Geodatabases (8%) | |
| 3 | Jan 15 – Jan 19 | Lab 1 | |
| 4 | Jan 22 – Jan 26 | Lab 2 Georeferencing (8%) | Lab 1 |
| 5 | Jan 29 – Feb 2 | Lab 2 | |
| 6 | Feb 5 – Feb 9 | Lab 3 Automation (6%) | Lab 2 |
| 7 | Feb 12 – Feb 16 | Reading Break | |
| 8 | Feb 19 – Feb 23 | Lab 4 Suitability Analysis (10%) | Lab 3 |
| 9 | Feb 26 – Mar 2 | Lab 4 | |
| 10 | Mar 5 – Mar 9 | Lab 4 | |
| 11 | Mar 12 – Mar 16 | Lab 5 Story Maps (8%) | Lab 4 |
| 12 | Mar 19 – Mar 23 | Lab 5 | |
| 13 | Mar 26 – Mar 30 | Presentations | Lab 5 |
| 14 | April 2 – Apr 6 | No Lab | |

LAB ACCESS POLICY

The lab is open Monday through Friday from 8:30 am to 4:30 pm.

You will have space on our servers to complete assignments – only materials relating to GEOG 323 can be stored – no personal or private material allowed

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(<http://web.uvic.ca/calendar2011/FACS/UnIn/UARe/PoAcI.html>)