



COURSE OUTLINE

**Advance Topics in Geographic Information:
Understanding Our Use of
Geospatial Technologies**

Office Hours: Thursday at 2:00pm

Office Location: DTB A237

Contact: chrisbone@uvic.ca

COURSE DESCRIPTION

This course forces us to critique how we use geospatial technologies. GIS and related technologies are widely seen as an ideal approach for addressing a range social and environmental issues, but rarely do we perform constructive critiques regarding our use of such mechanisms. Using indigenous territory and environmental degradation as topics of inquiry, we will develop and critique web mapping applications, mobile apps, and story maps with regards to how such technologies create specific forms of knowledge, power, and exclusion. We will be working with multiple community organizations and utilizing both open-source and proprietary software to develop a more comprehensive understanding of the benefits and consequences of using geospatial technologies. The overall objective of this course is to prepare students for the world of geospatial technologies beyond the classroom.

KEY THEMES: Geographic information systems, critical research, indigenous territory, environmental health, open-source software, mobile apps, web mapping, data privacy

LEARNING OUTCOMES

After completing this course, you will be able to:

- Describe how contemporary geospatial technologies conflict with different perceptions of space
- Demonstrate your ability to critically examine how to utilize GIS for addressing contemporary spatial issues involving people and place
- Use a combination of open-source and proprietary GIS software for completing a project involving geographic information
- Develop mobile and web mapping applications for public use
- Communicate geographic information and the use of geographic technologies to a broad audience

FIELDTRIPS

Two fieldtrips are planned for this course:

- Saturday, January 20th 10am to 1pm: Colonial Reality Bus Tour
- Saturday, February 24th 10am to 12pm: Indigenous Monuments Bike Tour

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EVALUATION

Indigenous Mapping Project Phase I	10%
Indigenous Mapping Project Presentation	5%
Indigenous Mapping Project Phase II	10%
Indigenous Monuments Mobile Map Tour	25%
City Soils Healing Project Web Application Exhibit	25%
Weekly Lab Products	5%
Reading and Lecture Responses	10%
Reading and Lecture Responses	10%
Total	100%

GRADING SYSTEM

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 INFO

- Geography Department website: <http://geog.uvic.ca>
- Undergraduate Advisor: Dr. Phil Wakefield – geogadvisor@uvic.ca

COURSESPACES

CourseSpaces will be used for this course. Please visit your CourseSpaces dashboard to access the course's site.

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POLICY ON LATE ASSIGNMENTS

All projects are completed in teams. Each student is responsible to ensure that their team submits their projects on time. **Late projects will not be accepted.**

Students are expected to attend all lectures and complete all readings. For each lecture and reading, a set of questions will be posed for which students are required to provide a response by the stated deadline. **Late responses will not be accepted.**

Students are expected to attend all labs and complete lab tasks assigned by the teaching assistant. **Late submissions of lab tasks will not be accepted.**

POLICY ON ATTENDANCE

Attendance is mandatory to all lectures and labs. In addition, we will be taking two fieldtrips during the course, both on Saturdays. While fieldtrips are not mandatory, they will greatly enrich students' experience in the course and knowledge of the local area. All students are highly encouraged to attend.

ACADEMIC INTEGRITY

It is every student's responsibility to be aware of the university's policies on academic integrity, including policies on **cheating, plagiarism, unauthorized use of an editor, multiple submission, and aiding others to cheat.**

Policy on Academic Integrity: <http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html>

If you have any questions or doubts, talk to me, your course instructor. For more information, see <http://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 documented disability or health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL as soon as possible <https://www.uvic.ca/services/cal/>). The RCSD staff is available by appointment to assess specific needs, provide referrals, and arrange appropriate accommodations. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

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.

COURSE EXPERIENCE SURVEY (CES)

I 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.

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WEEKLY CALENDAR

WEEK ONE: JANUARY 9TH

LECTURE: WELCOME

- Territory acknowledgement and discussion on the importance of place by Ruth Young, Indigenous Curriculum Coordinator for the Faculty of Social Sciences
- Description of course and student expectations by Chris Bone
- Reading: *WSANEC: Horne, J. 2012. Emerging Land or Emerging People. The Arbutus Review, 3(2): 6-19.*

LAB: INTRODUCTION TO OPEN-SOURCE SOFTWARE

- Using Google Earth Pro as a GIS
 - Introduction to QGIS
-

WEEK TWO: JANUARY 16TH

LECTURE: MAPPING AND TERRITORY

- Critiquing our use of geospatial technologies
- Rethinking how we approach the use of GIS
- Reading: *Thom, B. 2009. The paradox of boundaries in Coast Salish territories. Cultural Geographies, 16: 179-205.*

LAB: MIGRATING DATA BETWEEN GOOGLE EARTH AND QGIS

- Exporting KML files from Google Earth
 - Importing data to QGIS
 - Projecting data in QGIS
 - Editing data in QGIS
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WEEK THREE: JANUARY 23RD

LECTURE: HISTORY OF MAPPING INDIGENOUS LANDS

- Understanding how GIS has been employed for mapping of indigenous lands worldwide
- Learning how to develop your own GIS given available resources and constraints
- Reading: *Chapin, M., Z. Lamb, and B. Threlkeld. 2005. Mapping Indigenous lands. Annual Review of Anthropology, 34: 619-638.*

LAB: MAKING WEB MAPS

- Publishing web maps from QGIS to Leaflet
-

WEEK FOUR: JANUARY 30TH

LECTURE: STORIES OF LAND AND PEOPLE

- Learning how relationships between people and land are shaped by stories
- Developing ideas of how to incorporate stories in GIS
- Reading: *Paul, P.K., 1995. The Care-takers: The re-emergence of the Saanich Indian Map. Institute of Ocean Sciences, Department of Fisheries and Oceans, Sydney, B.C. pp. 18.*

LAB: MAKING STORY MAPS

- Using Leaflet and Wordpress to develop story maps

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WEEK FIVE: FEBRUARY 6TH

LECTURE: PRESENTATIONS

- Team presentations of Indigenous Mapping Project Phase I

LAB: CUSTOMIZING, PUBLISHING, AND TESTING WEB CONTENT

- Testing workflows between QGIS, Leaflet, and Wordpress
-

WEEK SIX: FEBRUARY 13TH

READING BREAK: NO LECTURES OR LABS

WEEK SEVEN: FEBRUARY 20TH

LECTURE: MOBILE MAPPING OF INDIGENOUS MONUMENTS

- Presentation of the Oak Bay Monuments project by Marion Cumming and Mike Stacey from the Oak Bay Community Organization
- Developing mobile mapping applications
- Reading: *Hoelscher, S. and D.H. Alderman. 2004. Memory and place: geographies of critical relationship. Social and Cultural Geography, 5(3): 347-355.*

LAB: MAKING MOBILE APPS

- Introduction to Esri App Studio
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WEEK EIGHT: FEBRUARY 27TH

LECTURE: TESTING MOBILE APPLICATIONS

- A technological approach to testing your mobile application
- Reading: *Gao, J., X. Bai, W-T. Tsai, and T. Uehara. 2014. Mobile application testing: a tutorial. IEEE Computer Society, DOI: 10.1109/MC.2013.445*

LAB: MOBILE APP REFINEMENT

- Customizing app components using App Studio

* Wednesday, February 28th: Last day for withdrawing from full year and second term courses without penalty of failure

WEEK NINE: MARCH 6TH

LECTURE: WEB APPS FOR ENVIRONMENTAL KNOWLEDGE

- Presentation of the City Soils Healing Project by Steeve Deschenes, GeoBC
- Developing web mapping applications
- Reading: *Lahr, J. and L. Kooistra. 2010. Environmental risk mapping of pollutants: state of the art and communication aspects. Science of the Total Environment, 408: 3899-3907.*

LAB: MAKING MOBILE MAPS

- Introduction to ArcGIS Online

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WEEK TEN: MARCH 13TH

LECTURE: SPATIAL ANALYTICS

- Presentation of the City Soils Healing Project by Steeve Deschenes, GeoBC
- Developing web mapping applications
- Reading: Esri. 2017. Spatial Analytics. Last accessed on December 14, 2017 at <http://www.esri.com/products/arcgis-capabilities/spatial-analysis>.

LAB: MAKING MOBILE MAPS

- Introduction to Web App Development in ArcGIS Online
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WEEK ELEVEN: MARCH 20TH

LECTURE: PRIVACY AND SECURITY WITH GEOSPATIAL TECHNOLOGIES

- Adhering to legal requirements with location-based information
- Respecting individual privacy on the geoweb
- Reading: *Elwood, S. and A. Leszczynski. 2011. Privacy, reconsidered: new representations, data, practices, and the geoweb. Geoforum, 42(1): 6-15.*

LAB: MAKING MOBILE MAPS

- Refining Web Applications in ArcGIS Online
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WEEK TWELVE: MARCH 27TH

LECTURE: PRESENTING YOURSELF AS A QUALIFIED EXPERT IN GEOSPATIAL TECHNOLOGIES

- How to approach your first job in the geospatial industry
- How to present your skills and qualifications
- How to communicate your critical knowledge of GIS and the geospatial industry

LAB: MAKING MOBILE MAPS

- Refining Web Applications in ArcGIS Online
-

WEEK THIRTEEN: APRIL 3RD

EXHIBIT

- Presenting your work from the term to members of the university and broader community

DISCLAIMER

The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.

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ASSIGNMENTS

ASSIGNMENT 1: INDIGENOUS MAPPING PROJECT (25%)

Assigned: January 9th

Phase 1 Due: February 5th (10%)

Phase 1 Presentation: February 6th (5%)

Phase 2 Due: April 2nd (10%)

ASSIGNMENT 2: MOBILE APP TOUR OF INDIGENOUS MONUMENTS (25%)

Assigned: February 20th

Due: March 12th

ASSIGNMENT 3: CITY SOILS HEALING WEB APP (25%)

Assigned: March 6th

Due: April 2nd

EXHIBIT (5%)

April 3rd