



ORIGINAL COURSE IMPLEMENTATION DATE: September 2022  
 REVISED COURSE IMPLEMENTATION DATE: September 2026  
 COURSE TO BE REVIEWED (six years after UEC approval): March 2032  
 Course outline form version: 29/08/2024

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

**Note: The University reserves the right to amend course outlines as needed without notice.**

<b>Course Code and Number:</b> GEOG 358	<b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>												
<b>Course Full Title:</b> GIS for Safe and Healthy Communities <b>Course Short Title:</b> GIS: Safe Healthy Communities													
<b>Faculty:</b> Faculty of Science	<b>Department/School:</b> Planning, Geography, and Environmental Studies												
<b>Calendar Description:</b> Concepts in community health and safety mapping, environmental health, and geographic profiling will be investigated through the application of spatial analysis techniques and Geographic Information Systems (GIS).  Note: Field trips outside of class time may be required. Please refer to the department website for scheduling information.													
<b>Prerequisites (or NONE):</b>	45 university-level credits.												
<b>Corequisites (if applicable, or NONE):</b>	NONE												
<b>Pre/corequisites (if applicable, or NONE):</b>	NONE												
<b>Antirequisite Courses</b> ( <i>Cannot be taken for additional credit.</i> ) Former course code/number: <b>GEOG 300N</b> Cross-listed with: Equivalent course(s):  <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>	<b>Course Details</b> Special Topics course: <b>No</b> <i>(If yes, the course will be offered under different letter designations representing different topics.)</i>  Directed Study course: <b>No</b> <i>(See <a href="#">policy 207</a> for more information.)</i>  Grading System: <b>Letter grades</b>  Delivery Mode: <b>May be offered in multiple delivery modes</b>  Expected frequency: <b>Winter only</b>  Maximum enrolment (for information only): <b>36</b>												
<b>Typical Structure of Instructional Hours</b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture/seminar</td><td style="text-align: center;">20</td></tr> <tr><td>Experiential (field trip)</td><td style="text-align: center;">5</td></tr> <tr><td>Supervised laboratory hours (computer lab)</td><td style="text-align: center;">15</td></tr> <tr><td>Tutorials/workshops</td><td style="text-align: center;">5</td></tr> <tr><td> </td><td> </td></tr> <tr><td style="text-align: right;"><b>Total hours</b></td><td style="text-align: center;"><b>45</b></td></tr> </table>	Lecture/seminar	20	Experiential (field trip)	5	Supervised laboratory hours (computer lab)	15	Tutorials/workshops	5			<b>Total hours</b>	<b>45</b>	<b>Prior Learning Assessment and Recognition (PLAR)</b> PLAR is available for this course.
Lecture/seminar	20												
Experiential (field trip)	5												
Supervised laboratory hours (computer lab)	15												
Tutorials/workshops	5												
<b>Total hours</b>	<b>45</b>												
<b>Scheduled Laboratory Hours</b> Labs to be scheduled independent of lecture hours: <b>No</b>	<b>Transfer Credit</b> (See <a href="#">bctransferguide.ca</a> .)  Transfer credit already exists: <b>Yes</b> Submit outline for (re)articulation: <b>Yes</b> <i>(If yes, fill in <a href="#">transfer credit form</a>.)</i>												
<b>Department approval</b>	<b>Date of meeting:</b> December 8, 2025												
<b>Faculty Council approval</b>	<b>Date of meeting:</b> January 23, 2026												
<b>Undergraduate Education Committee (UEC) approval</b>	<b>Date of meeting:</b> March 27, 2026												

**Learning Outcomes** *(These should contribute to students' ability to meet program outcomes and thus Institutional Learning Outcomes.)*

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

1. Describe how information related to environmental and community health and safety are represented and managed on computers as GIS data.
2. Explain the core concepts of community safety and community health GIS in written, oral, and visual form.
3. Operate standard and emerging GIS software used in community and health and safety investigation.
4. Present findings on the applicability and ethics of using GIS in helping enhance safety measures and reducing community health risks in a local and regional setting.
5. Integrate primary and secondary geographic data in cartographic form to support community health and safety investigations into a real-world projects.
6. Explain Indigenous perspectives in mapping community health, safety and wellbeing.

**Recommended Evaluation Methods and Weighting** *(Evaluation should align to learning outcomes.)*

Quizzes/tests/midterm:	35%	Assignments:	40%	Project:	25%
	%		%		%

**Details:**

Assignments include successful creation of a map package (40%), a map layout (30%) which may be static or interactive, and communication materials (30%) such as formal letters, e-mails, posters, and StoryMaps.

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Instructional Methods** *(Guest lecturers, presentations, online instruction, field trips, etc.)*

**Texts and Resource Materials** *(Include online resources and Indigenous knowledge sources. [Open Educational Resources](#) (OER) should be included whenever possible. If more space is required, use the [Supplemental Texts and Resource Materials form](#).)*

Type	Author or description	Title and publication/access details	Year
1. Textbook	Chainey, S. and Radcliffe, J.	GIS and Crime Mapping	2013
2. Textbook	J.A. Maantay (Editor) S McLafferty (Editor)	Geospatial Analysis of Environmental Health	2016
3. Textbook	Cromley, EK and SL McLafferty	GIS and Public Health	Current
4. Textbook	Owusu-Nempah, A., & Luscombe, A.	Race, cannabis, and the Canadian war on drugs: An examination of Cannabis arrest data by race in five cities	2020

**Required Additional Supplies and Materials** *(Software, hardware, tools, specialized clothing, etc.)*

Courses in Geography may have mandatory field trips with additional fees. Details are available on course syllabus distributed in class.

**Course Content and Topics**

This applied GIS course will be offered using a modified problem-based learning strategy where a project which may be part of CityStudio challenge such as safety in local parks or avian flu monitoring in Chilliwack poultry farms as sample themes of the problem based learning. The students use secondary data in GIS lab exercises, but when they apply their learning from the lab exercises to their project, they will be conducting research about the local area, search for secondary safety or health data or gather primary data that can be used in solving the issues raised in the theme and in completing expected deliverables of the CityStudio challenge. Short mini lessons on key topics may be given by the instructor as special GIS techniques that might be necessary to complete the deliverables. The instructor will facilitate the learning environment and provide key direction, mini lessons, and background information.

Topics likely to be covered include:

- Introduction to safety and disease mapping and ArcGIS
- GIS and the community safety and community health
- Effective community safety and disease map design and layout
- Geocoding safety and health data and standard query language, and geodatabases
- Geology and Isotope Mapping in safety and disease investigations
- Mapping organisms in safety and disease investigations
- Preparing community safety and community health data for analysis using geoprocessing
- Analyzing community safety and community health data through spatial statistics
- Safety and disease hotspots analysis
- Predicting safety and diseases in communities