University of Victoria

COURSE OUTLINE
ADVANCED TOPICS IN GEOGRAPHICAL INFORMATION SCIENCES

Contact: jlaura@uvic.ca or 250-516-1993
Office Location: DTB A243
Office Hours: TBA
Class Meetings: Tuesday and Wednesday 1:30pm to 2:20pm

Course Background

In this course students will learn how to utilize computer programming, web maps, and space-time analysis techniques to conduct geographic research. Topics covered include: automation of geoprocessing tasks with python, web mapping for data collection, space-time statistics, and data mining with spatial data. Students will use ArcGIS Pro, Python, RStudio, and open source GIS software.

- Demonstrate the ability to develop geospatial workflows to solve spatial data problems
- Exhibit competency in utilizing Python for geoprocessing in ArcGIS Pro
- Build web maps to collect research focused data
- Analyze and predict spatial patterns and integrate spatial datasets
- Demonstrate the ability to effectively communicate research findings in both web and oral venues.

REQUIRED TEXT
There is no required textbook for this course, however online learning resources will be provided on Brightspace throughout the course.

EVALUATION
50% Laboratory Assignments x 5
10% Project Proposal
40% GIS Project

Lab 1 - 5%
Lab 2 - 10%
Lab 3 - 10%
Lab 4 - 10%
Lab 5 - 15%

No audio or video recordings are permitted unless approved in writing (in advance) by the course instructor.

COURSE INFORMATION

- All UVic students are automatically provisioned access to course website via **Brightspace.** Select **Geog428.**

Tentative Schedule – subject to change

Week	Dates	Lecture	Lab	Due Dates
1	Sept. 6th – Sept. 10th	Introduction to the course	No Lab	
2	Sept. 13th – Sept. 17th	GIS Skills for the Workplace	Story Map Journal Lab 1	
3	Sept. 20th – Sept. 24th	Automation with Model Builder	Model Builder Lab 2	Lab 1
4	Sept. 27th – Oct. 1st	Python coding		
5	Oct. 4th – Oct. 8th	Web Mapping for Citizen Science	Survey 1, 2, 3 Lab 3	Lab 2
6	Oct. 11th – Oct. 15th	Creating a GIS Project		
7	Oct. 18th – Oct. 22nd	Space-time statistics	Statistics with Crime Stat Lab 4	Lab 3
8	Oct. 25th – Oct. 29th	Data Mining with ArcGIS Pro	Regression Tree Analysis and Random Forests Lab 5	Lab 4
9	Nov. 1st – Nov. 5th	Project proposal expectations and ideas	Lab	
10	Nov. 8th – Nov. 12th	Reading Break and Guest Lecture	No Lab	
11	Nov. 15th – Nov. 19th	Project discussion and consultation		Lab 5
12	Nov. 22nd – Nov. 26th	Project Presentations		
13	Nov. 29th – Dec. 3rd	Project Presentations		

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%	An A+, A, or A- is earned by work which is technically superior, shows mastery of the subject matter, and in the case of an A+ offers original insight and/or goes beyond course expectations. Normally achieved by a minority of students.
B+ B B-	6 5 4	77-79% 73-76% 70-72%	A B+, B, or B- is earned by work that indicates a good comprehension of the course material, a good command of the skills needed to work with the course material, and the student's full engagement with the course requirements and activities. A B+ represents a more complex understanding and/or application of the course material. Normally achieved by the largest number of students.
C+ C	3 2	65-69% 60-64%	A C+ or C is earned by work that indicates an adequate comprehension of the course material and the skills needed to work with the course material and that indicates the student has met the basic requirements for completing assigned work and/or participating in class activities.
D	1	50-59%	A D is earned by work that indicates minimal command of the course materials and/or minimal participation in class activities that is worthy of course credit toward the degree.
F	0	0-49%	F is earned by work, which after the completion of course requirements, is inadequate and unworthy of course credit towards the degree.
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: uvic.ca/socialsciences/geography/
Undergraduate Advising: geogadvising@uvic.ca
Department Chair: Dr. David Atkinson geogchair@uvic.ca

Brightspaces

Brightspaces https://bright.uvic.ca/d2l/home is a learning management systems (LMS) that will serve as the main avenue of communication. 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

TECHNOLOGY REQUIREMENTS

- **Technology requirements**: You will need reliable access to the internet and a computer (preferably with webcam/microphone) or a smartphone to connect with the class for the online

lessons (through Zoom). You should be comfortable using a word processor such as MS Word (Office 365) and will be required to submit some assignments in .doc or .pdf formats.

- **Technology requirements for Labs:** You will need reliable access to the internet and a computer. You will be unable to complete the labs with a smartphone or tablet. The Labs employ a variety of GIS software requirements available through remote access to the Geomatics Teaching labs https://remotelab.uvic.ca/my.policy.

POLICY ON LATE ASSIGNMENTS
Late assignments will be penalized 10% per day. Assignments will not be accepted after 5 days past the due date.

PLAGIARISM
Plagiarism is not permitted. For more information about what constitutes plagiarism, please visit: http://www.uvic.ca/learningandteaching/students/resources/expectations/ Policy on Academic Integrity: http://web.uvic.ca/calendar2015-01/FACS/UnIn/UARe/PoAcI.html

ACCESSIBILITY
Students with diverse learning styles and needs are welcome in this course. In particular, if you have a documented disability/health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning as soon as possible. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations http://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.

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 online 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.