

GEOG 428
ADVANCED TOPICS IN GEOGRAPHICAL INFORMATION SCIENCES

Instructor: Dr. Chris Bone

Office Hours: Monday 1:00pm – 2:00pm and by appointment

Office Location: DTB A246a

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Teaching Assistant: Jason Kelley

Office Hours: Tuesday 11:00am - 12:00pm

Office Location: DTB A250a (TA Office in the Geomatics Lab)

Contact: jkelly@uvic.ca

COURSE DESCRIPTION

In this course, students learn how to utilize computer programming for performing a variety of geospatial processing operations. Topics covered in this course include developing geospatial models, data types, programming statements, database management through programming, project management, the geospatial technology industry, and the range of available geospatial platforms. The course focuses on ArcGIS Pro, utilizing model builder, Python programming, and ArcPy modules. At the completion of this course, students will be able to program in Python to complete a variety of geospatial tasks in ArcGIS Pro.

KEY THEMES: Geospatial processing, programming, Python, geospatial platforms

LEARNING OUTCOMES

- Demonstrate the ability to develop geospatial workflows to solve spatial data problems.
- Exhibit competency in utilizing Python for geoprocessing in ArcGIS Pro
- Provide research questions and solutions to a self-defined project that requires programming
- Demonstrate the ability to effectively communicate programming solutions and research findings in both web and oral venues.

EVALUATION

Assignments (3)	= 40%*
Final Project Proposal	= 10%
Final Project	= 45%
Presentations and Evaluations	= 5%

**Assignments are not equally weighted*

WEEKLY CALENDAR

WEEK	DATE	TOPIC
1	January 6	Introduction to Programming in Geography
2	January 13	Coding and Testing Geospatial Models
3	January 20	Geospatial Programming with Python
4	January 27	Loops and Conditional Statements
5	February 3	Geospatial Queries with Python
6	February 10	Cursors for Data Access
7	February 17	Reading Break
8	February 24	Cursors for Data Manipulation
9	March 2	Project Management
10	March 9	Geospatial Knowledge Communication
11	March 16	Preparing for the Geospatial Job Market
12	March 23	Project Help Session
13	March 30	Presentations

Schedule for Course Deliverables

Assignment 1: Developing and Testing Geospatial Workflows and Models (10%)

Due Tuesday, January 21st (Wednesday lab) / Thursday, January 23rd (Friday lab) at 11:55pm

Assignment 2: Geoprocessing with Python (15%)

Due Tuesday, February 4th (Wednesday lab) / Thursday, February 6th (Friday lab) at 11:55pm

Assignment 3: Data Analysis with Python (15%)

Due Tuesday, February 18th (Wednesday lab) / Thursday, February 20th (Friday lab) at 11:55pm

Final Project Proposal (10%)

Due Monday, March 2nd at 11:55pm

Final Project (45%)Due Sunday, March 29th at 11:55pm**Project Presentations (5%)**Monday, March 30th in lecture**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 INFOGeography Department website: uvic.ca/socialsciences/geographyUndergraduate Advising: geogadvising@uvic.ca**COURSESPACES**

Please visit your CourseSpaces site to access the website for Geog 428.

POLICY ON LATE ASSIGNMENTS

- Late assignments will be penalized 10% per day.
- Assignments will not be accepted past five days after the due date.
- Email the link for late assignments to the course TA in order for it to be evaluated; failure to do so will result in a grade of zero.
- Any request for an extension must be accompanied by an official letter from the Centre for Accessible Learning, a medical practitioner, or athletics director in advance of the due date of the assignment, otherwise the assignment will be considered late if submitted past the deadline.

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: web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.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 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.