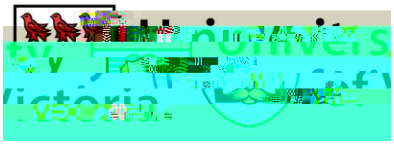

This course introduces students to a variety of spatial analysis techniques that can be used for understanding geographic phenomena. Topics covered in this course include descriptive spatial analysis, spatial sampling, inferential spatial analysis, spatial interpolation, spatial correlation and geographic regression. Lectures focus on the geographic theory and equations behind each method, while labs provide an opportunity for students to implement a variety of techniques to address questions that are geographic in nature. All labs and exercises are completed using the scientific programming language *R*. Students who successfully complete this course will not only have more analytical tools at their disposal, but will also become versed in spatial analysis discourse, which will allow them to interrogate scientific research employing a range of spatial analytical approaches.

Spatial analysis, statistics, programming, communicating science

Advanced Spatial Analysis. Provided by Top Hat (details will be given in first lecture)

Define appropriate spatial analysis methods needed for specific geographical questions.
Analyze geographic data to characterize spatial patterns of observations and spatial relationships between variables.
Analyze and interpolate spatial data in order to create continuous surfaces.
Demonstrate the ability to implement a suitable spatial analytical workflow for providing answers to geographic questions.
Demonstrate proficiency in using the scientific programming language R to conduct spatial analysis.
Demonstrate familiarity with spatial analysis language in order to effectively interrogate scientific research employing relevant methods.

Assignments (4)	= 55%*

Please visit your CourseSpaces site to access the website for Geog 418/518.

WEEKLY CALENDAR

WEEK	DATE	
1	Sept. 5	Welcome
2	Sept. 11 - 12	Descriptive & Spatial Statistics
3	Sept. 18 - 19	Inferential Spatial Statistics
4	Sept. 25 - 26	Nearest Neighbor and Quadrat Analysis
5	Oct. 2 - 3	The *k*-function and Kernel Density Estimation
6	Oct. 9 - 10	Spatial Autocorrelation & Sampling
7	Oct. 16 - 17	Global &