

**GEOGRAPHY 639  
H(3-3) Area III**

**Advanced Spatial Analysis and Modelling**

**Timetable:** June 05 – August 14  
Lectures: Tu, Th 09:00-10:50  
Labs: Tu, Th 14:00-15:50

**Catalogue #:** 30908

**Instructor:** Torsten Geldsetzer  
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Phone: 210-8449  
Office: ES 430  
Office Hours: By Appointment

Course Assistant: TBA

**Official Course Description:**

Comprehensive coverage of spatial analysis and spatial modelling as currently used within GIS and remote sensing.

**Prerequisite:**

Consent of the Department

**Course Description:**

This course provides an in depth look at both the theoretical and applied aspects of spatial analysis and modelling. Statistical analysis and modelling of geolocated datasets are dependent on the spatial framework in which processes occur. The goals of this course are to make students aware of such spatial processes and to arm them with the comprehensive knowledge and analytical tools required to undertake spatial modeling. This course will also address the issue of sampling related to interpreting spatial processes.

**Topics that will be covered in the course include:**

- Introduction to Spatial Analysis
- Spatial Processes
- Point Pattern Analysis
- Interpolation Methods and Trend Surface Analysis
- Sampling and Aliasing
- Geostatistics
- Spatial Autocorrelation and Spatial Regression
- Geographically Weighted Regression
- Selected Advanced Techniques

**Text(s)/Readings:**

No specific text is required for this course, however, the following text is recommended:

Rogerson, P.A. (2006) *Statistical Methods for Geography. Second Edition*. Sage Publications Ltd., London. 304 pp.

**Lab Assignments:**

Students will undertake a series of lab assignments designed to provide hands-on experience programming with popular statistical packages (i.e. SPSS, S-PLUS). Students will also be exposed statistical routines within ArcGIS.

**Grading\* :**

Laboratory Assinments (n=6) @ 5 marks each: 30%

Journal Article Review: Presentation 5%  
Report 15%

Project: Proposal 5%  
Literature Review 10%  
Presentation 5%  
Final Report 25%

Participation 5%

There is **no** final examination for this course. It is **not** essential to pass all components to pass the course as a whole.

**Grading Scheme:**

Grade	Percent	Graduate Description
A+	95.0 - 100	Outstanding
A	90.0 - 94.9	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	85.0 – 89.9	Very good performance
B+	80.0 – 84.9	Good performance
B	75.0 – 79.9	Satisfactory performance
B-	70.0 – 74.9	Minimum pass for students in the Faculty of Graduate Studies

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\* subject to change before classes officially start.

C	60.0 – 69.9	All grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
D	50.0 – 59.9	
F	<50.0	

### Academic Misconduct:

Students are required to be familiar with the University of Calgary regulations pertaining to academic misconduct, particularly plagiarism. This course will have a zero-tolerance policy for academic misconduct. Please consult the Faculty of Graduate Studies Calendar for details on Student Misconduct.

#### Plagiarism

Academic dishonesty is not an acceptable activity at the University of Calgary and students are **required** to read the Student Misconduct section in the University Calendar. Quite often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are 1) presenting another student's work as your own, 2) presenting an author's work or ideas as your own without proper referencing, and 3) using work completed for another course. This activity will not be tolerated in this course and students conducting themselves in this manner will be dealt with according to the procedures outlined in the calendar.

#### Re: Posting of Grades and Picking-up of Assignments

- Assignments will be handed back only in class or by the Professor at pre-arranged time(s).
- To receive your assignment back via mail, please include an appropriately sized self-addressed, stamped envelope with your assignment when handing in to the professor.
- Posting of grades will be at the discretion of each Professor and, if posted, they will be scrambled. Grades will **not** be available at Geography's main office.

#### Contact Information for Student and Faculty Representation

- SU VP Academic Phone: 220-3911 and e-mail: [suypaca@ucalgary.ca](mailto:suypaca@ucalgary.ca)
- SU Faculty Rep. Phone: 220-3913 and e-mail: [socialsciirep@su.ucalgary.ca](mailto:socialsciirep@su.ucalgary.ca)

#### Campus Safewalk

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus including the LRT, parking lots, bus zones and University residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your Campus destination.