Introduction

A geographic information system (GIS) is a tool for automating geographic concepts. At its most basic level it can help us to explain distributions and make decisions. At an advanced level it can help us understand complex spatial processes. Geographers (and others) use GISs to help them understand, describe, and predict how things are arranged in the real world.

All too often we produce a map from a GIS and conclude, "Gee, it looks like there is a pattern in the data," but we struggle to attach any certainty to our analysis. The real question we want answered is most likely, "Is there a significant pattern?" The methods developed in this course will help you answer this question. The aim of this course is to enable you to build your own toolbox of spatial analysis techniques to investigate spatial processes. By the end of this course, you will feel comfortable at tackling a wide-range of spatial analyses using GIS and remote sensing.

Required Text


Recommended Texts


**Coursework & Grading**

| Lab Assignments                                                                 | 40%  
|---------------------------------------------------------------------------------|------
| • 8 lab assignments based on the lecture and text materials                     | (8 x 5%) |

| Literature Review                                                              | 10%  
|---------------------------------------------------------------------------------|------
| • A review of a published research paper where advanced spatial analysis        |      
|   techniques were used.                                                        |      

| Modelling Project*                                                             | 50%  
|---------------------------------------------------------------------------------|------
| • A project demonstrating the development and application of advanced spatial  |      
|   analysis techniques to address a geographic problem. You may work on this    |      
|   project individually or in groups of no more than 2.                         |      
| *This is a core course activity: your Modelling Project must receive a passing |      
|   grade for you to receive a passing grade for the course.                     |      

You are encouraged to work together to solve course related problems and issues. All submitted work, however, must be original (i.e. using your own words), unless otherwise specified.

**Topic Outline**

*(see the on-line course notes for details)*

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<thead>
<tr>
<th>Weeks</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1</td>
<td>Geographic Information Analysis and Spatial Data</td>
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<td></td>
<td>The Pitfalls and Potential of Spatial Data</td>
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<td>2</td>
<td>A Review of Basic Data Management and Spatial Analysis Tools</td>
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<td>3</td>
<td>Processes and Patterns</td>
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<td>4-5</td>
<td>Point Pattern Analysis</td>
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<td>6-7</td>
<td>Lines and Networks</td>
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<td>8-9</td>
<td>Area Objects and Spatial Autocorrelation</td>
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<td>10</td>
<td>Describing and Analyzing Fields</td>
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<td>11</td>
<td>Principles of Environmental Modelling</td>
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<td>12</td>
<td>Gravity Models</td>
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Announcements for Students in Faculty of Arts Courses, Winter 2011

Academic Regulations
You are responsible for understanding and following the relevant academic regulations outlined in the Undergraduate Calendar. The most important of these are summarized in Section 5.1, “Responsibilities of Students”. I strongly urge you to read this section at your earliest convenience. Every year some of our students lose money or academic credit because they overlooked one or more of the university’s rules; don’t let this happen to you.

Academic Misconduct
You are responsible for knowing all of the formal definitions of plagiarism, cheating and other forms of Academic Misconduct, as specified in section 5.13.2 of the Undergraduate Calendar. You will not be able to excuse academic misconduct by arguing that you didn’t know it was misconduct. If you are unsure, check with your instructor beforehand. The Faculty of Arts will vigorously pursue all suspected cases of academic misconduct; the penalties for it include indefinite expulsion from the University.

Procedures and Dates for Dropping Courses
If you want to withdraw from a class without academic penalty and/or with a refund, you must make a formal request to this effect before the relevant deadline. You won’t automatically be withdrawn just because you stop attending classes. Students who are no longer attending classes but have not formally withdrawn are still considered to be registered, will not have their fees refunded, and will be assigned a failing grade of NP for the course. Please consult section 1.2.1 of the Undergraduate Calendar for refund deadlines.

It is Faculty of Arts policy that “Faculty teaching undergraduate courses will return graded assignments and/or exams worth at least 20% of the overall mark before the deadline for students to withdraw from a class with a grade of W. This principle will be waived only when implementation clearly would be impractical, such as for an honours thesis course.”

Procedures for Requesting Deferrals of Final Exams or Term Work
If for reasons beyond your control (such as illness, accident, or a death in the family) you become unable to complete your term work or final exams, please contact the Student Services Office of your Faculty or College as soon as possible for advice about getting your course work deferred. The procedures for deferrals are outlined in section 5.7 of the Undergraduate Calendar.

Cancelled Classes
When instructors can’t make a given class, they are to inform their department, which will post a sign outside the classroom that day notifying students that the class is cancelled. If an instructor does not come to class and no notice has been posted, please contact the relevant department office.

University Email Accounts
You should check your University of Regina email account regularly because the University will send any official correspondence to that address. You can easily have your University email forwarded to a commercial account like Hotmail by using the form available at item 3 on the "Top ten items of interest" listed at http://www.uregina.ca/compserv/. If you do so, however, be sure to check your junk folder for the first while, since some commercial email accounts classify University-originated emails as junk.

Personal Information
Please be sure to update your personal information at the beginning of each semester (address, telephone number, etc.) online if anything has changed.

Special Needs
Any special-needs students requiring accommodations in the classroom must first contact the Coordinator of the Disability Resource Office (585-4631) and then arrange to meet with the course instructor. A statement of the Faculty’s policies and procedures for special needs students can be obtained from the Student Services Office in CL 411 or at http://www.arts.uregina.ca/current-students/new-students/special-needs.

University Harassment and Discrimination Prevention Policy
All members of the University community are entitled to a professional working environment, free of harassment and discrimination. See section 8.4.6 of the Undergraduate Calendar for details.
Early Referral Program
Faculty of Arts students may participate in a student support initiative, Early Referral Program. Students may face challenges in undertaking course work and there are many resources available on campus that can provide assistance. If your instructor feels that you may benefit from additional support, he/she may forward your name and you will be contacted and offered an appointment with an advisor. Refer to www.uregina.ca/ssc for more information.

Faculty of Arts Code of Classroom Conduct

Things not to do in the classroom

1. Arrive after the class is scheduled to begin.
   • You’re distracting your fellow students from their note-taking. If there are in-class exercises or group discussions, your late arrival can throw off the allocation of tasks upon which the instructor settled before you arrived.

2. Leave before the class is over (or at least before it is scheduled to end).
   • Unless you’ve previously explained the situation, your instructor may think your departure is a comment on the class itself. If fellow students are scheduled to present later in the hour, they’ll hardly find your early exit flattering.

3. Engage in side conversations with your fellow students.
   • You’re publicly declaring that you’re bored and have better things to do with your time than listen to your instructor. Polite people find a way to conceal their boredom. It also makes life difficult for the students around you who do want to hear what the instructor has to say.

4. Text your friends and relatives.
   • This is just another form of side conversation.

5. Let your cell phone ring or, worse still, take a call.
   • Your classmates may laugh the first time your phone rings in class. But they won’t be so amused the next time. And you don’t want to know what they’ll be thinking if you go so far as to hold a conversation in the classroom. If you’re expecting an important call, let your instructor know in advance, leave the phone on vibrate, and exit the room before taking the call.

6. Use your laptop for purposes unrelated to the class.
   • The success of a class depends not just on what the instructor does and says, but also on how well the students listen and interact. If everyone followed your example, the class would be a disaster for all involved. If you plan to take notes on your laptop, think about sitting at the back of the classroom, where typing won’t be as distracting for other students.

I wish you an enjoyable and successful semester.

Cameron Louis, Associate Dean (Undergraduate)
Graduate students enrolled in Geography 891AN must complete the course requirements for Geography 409. In addition, Geography 891AN students will:

- Prepare a total of 3 literature reviews (one due at the end of January, February, and March, respectively); and
- Work on their final project individually.

## Coursework & Grading

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*This is a core course activity: your Modelling Project must receive a passing grade for you to receive a passing grade for the course.

All work submitted is expected to be of superior quality and demonstrate advanced insight. More rigorous grading will be applied to graduate student submissions.