# GEOM 2007C – Introduction to Geographic Information Systems
## Course Outline
SECTION C - Winter 2015
Department of Geography and Environmental Studies
Carleton University

Instructor:      Scott Mitchell, B359 Loeb Building      Phone:  613-520-2600 ext. 2695
      Email:  Scott.Mitchell@carleton.ca
      Office Hours: Thursdays 11-1, and any time my door is open

Teaching Assistants:      Anna Zaytseva  -  Email: Anna.Zaytseva@glel.carleton.ca

Course electronic resources:  We will use cuLearn as the primary gateway to course information.  Go to `http://culearn.carleton.ca` and log in using your student computing account.

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**Course calendar**:      Lectures Tuesdays 2:35-4:25pm, Loeb A720
      Labs (Loeb A200):      C1:      Thursday 9:35-11:25am, Loeb A200
      C2:      Thursday 11:35am-1:25pm, Loeb A200

**Course description**: This course introduces geographic information systems (GIS) as a set of tools for the management, analysis, and presentation of spatial information.  You will learn both conceptual and practical aspects of working with a GIS, and how to compile and work with spatial databases.  You are expected to gain an understanding of both the strengths and weaknesses of the systems presented in solving geographic research problems.  The course requires no prior knowledge of GIS itself, but some background in associated concepts in geomatics is assumed; if you have not taken GEOM 1004, GEOM 2004, or ERTH 2406 preceding this class, there will be some background reading.

**Readings:** Readings will be made available on cuLearn.

**Evaluation**:  There will be 3 lab assignments of equal weight, several lab orientation exercises that will not be marked, an online test, and a final project.  The grade weighting will be:

| | |
|---|---|
| Lab assignments (3): | 30% |
| Term test: | 30% |
| Final project: | 40% |

Technical problems occasionally cause delays.  Every effort will be made to prevent this from the lab systems perspective.  **It is your responsibility to reduce your exposure to potential problems by reading and listening to all instructions thoroughly and carefully, and taking care to avoid risky practices.**  You must practice careful file management (saving files in the proper directories, deleting all unwanted files, naming files thoughtfully, and keeping track of where everything is) at all times.

This course depends on a progression of practical exercises, with skills building upon each other across assignments.  **Late labs will not be accepted**, except in extreme cases with legitimate, documented reasons.  If you are not finished by the due date, it is best to turn in what you have at that time to get partial credit – it is very important that you do not get behind as new work is assigned.

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

**Plagiarism is a serious offence and will not be tolerated**. If you submit someone else's work (ideas or material) as your own, that is plagiarism. All ideas presented which are not your own must be properly referenced. This includes more than just verbatim presentation of the writings or ideas of others as one's own – it can also include near-verbatim copying, or even the use of someone else's ideas, from other students, books, the Internet, or anywhere else. All plagiarism offences will be reported to the Faculty Dean's office.

You will often be working collaboratively to prepare for an assignment and possibly even to collect data, but **you must ALWAYS submit individual course work**. This means that **every assignment must be written and submitted individually,** demonstrating your **personal understanding and interpretation of the assignment content**. Carleton's Academic Integrity Policy covers all these expectations and more, and is available at http://www2.carleton.ca/studentaffairs/academic-integrity

## Term Test

Late in the term (weeks 10-11) there will be a two-part test, with a combination of questions on course content and a practical component. There will be multiple choice and fill-in-the blank questions. The practical test will require you to use your GIS practical skills learned in assignments to answer the questions.

## Final Projects

During the second half of term, you will be working on individual final projects, producing interactive electronic map-based presentations. Examples of past projects will be discussed in class. Normally the project will focus on the Ottawa area, with a theme of your choice. You will submit all the files needed for a working map project, as well as a written report.

## Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the Student Guide.

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the Student Guide

**Academic Accommodations for Students with Disabilities:** The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made.

## GEOM2007C – Winter 2015 – Tentative Term Schedule

The following indicates my plan for the term.  Individual topics may shift as required (especially after Reading Week), but tests and due dates are fixed (once the FINAL outline comes out).

| Week | Date of Lecture | Topic(s) (lecture) | Practical Work (labs) |
|---|---|---|---|
| 1 | Jan 6 | Introduction to Course and GIS | Lab familiarity |
| 2 | Jan 13 | Spatial data: coordinates and projections (review), data models | Assignment 1 starts |
| 3 | Jan 20 | Attribute data: databases, attribute queries | Assignment 1 continues |
| 4 | Jan 27 | Spatial queries, manipulating vector data | **Assignment 1 due** Assignment 2 starts |
| 5 | Feb 3 | Data exchange, effective cartography Projects | Assignment 2 continues Project proposals assigned |
| 6 | Feb 10 | Vector data input: creating layers and digitizing | **Assignment 2 due** Assignment 3 starts |
| RW | | Study Break / Reading Week (no classes) | |
| 7 | Feb 24 | Digitizing and creating layers (cont'd) | **Project proposals due** |
| 8 | Mar 3 | Customizing ArcGIS – Building models and tools | Assignment 3 due Work on projects |
| 9 | Mar 10 | Spatial analysis, 3D visualization, network analysis; tests **discussed** | Work on projects |
| 10 | Mar 17 | Term test BEGINS – lecture content TBA (Scott away) | **Test (practical)** |
| 11 | Mar 24 | Theoretical test in lecture | Projects |
| 12 | Mar 31 | Other GIS software | Projects |
| 13 | Apr 7 | Wrap-up / review project requirements | **Final Project Due** by end of the day on April 8 |