GEOM 4008 – Advanced Topics in Geographic Information Systems
Course outline - Fall 2018
Department of Geography and Environmental Studies
Carleton University

Instructor: Scott Mitchell, B350A Loeb Building
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Email: Scott.Mitchell@carleton.ca
Office Hours: USUALLY Tuesdays 1:30, or by drop-in/appointment

Course calendar:

- Seminars: Two-hour seminar/discussion Tuesdays 9:35-11:25 LA A237

Detailed schedule will be developed over the first two weeks, adjusted according to numbers and interests of enrolled students.

A take-home exam will be administered at the end of the course.

Course web site: We will use CULearn, plus externally-accessible materials will also be available from http://dges.carleton.ca/courses/GEOM4008

Course objectives:

1. Explore advanced aspects of some current issues in geomatics, including:
   a. error and uncertainty analysis in spatial data and analysis,
   b. decision support systems,
   c. elevation modelling (data sources + interpolation algorithms),
   d. spatial pattern measurement or characterization, and
   e. open data, data standards and open source software development: impact and role in spatial data and analysis (standards, distributed databases, open tools).

   Understanding these concepts will be primarily developed using a combination of exploring the literature, class discussion, and in many cases, practical exercises. There will be presentations throughout the course to introduce and discuss topics, but there is a large component of independent learning in this class, and you will each contribute to the delivery of one of the seminars.

2. Develop skills and understanding of how your training in GIS relates to new software packages. Use this learning to provide new user documentation or tutorials to help others learn to do specific tasks in free or open source software packages, and/or accessing, transforming and making use of open data.

Prerequisites: GEOM 3005 (OR equivalent alternative GIS experience), and honours standing. Prospective students from other schools or backgrounds should contact me about other acceptable prerequisites.

Marking:

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<tr>
<td>Tutorial improvement</td>
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<td>Seminar</td>
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<td>Project proposal</td>
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<td>Quizzes</td>
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<td>Project presentation</td>
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<td>Participation</td>
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Requirements:

In this class, you are expected to become familiar with GIS software you have never used before. We will use the GIS lab in Loeb A237, where installed software includes ArcGIS, PCI, IDRISI, MapInfo, QGIS, GRASS, etc., on a Windows or Linux platform. Use of other software may be possible. Students are expected to already be proficient in at least one GIS package (I assume ESRI ArcGIS), and able to independently learn any new software that is required. Software training is not a part of this course in the fashion you are used to in other GEOM courses, however we recognize that many of the tools we use will probably be new to you, and you will get help where needed. This will be the focus of your final project for this course. The deliverables will include a published tutorial with any required training materials, which will be released under a Creative Commons license and made available over the Internet. The take-home final exam is a final report on this project.

Major topics covered in class will be accompanied by a quiz, in cuLearn, designed to make sure you grasped the main concepts in that topic. Each quiz should be completed prior to the start of the following unit. Scheduling details will be worked out in the first weeks of class, according to the distribution of students signing up for different topics.

Late assignments will receive a penalty of ten percent for up to 2 days late, and after that they will not be accepted without appropriate reasons and verifiable documentation. All assignments must be word processed and submitted digitally through cuLearn and the tutorial wiki site.

Instructional & Conduct Offences:

Instructional offences include, among other activities, cheating, contravening examination regulations, plagiarism, submitting similar work in 2 or more courses without prior permission, and disrupting classes. Conduct offences apply in areas of discrimination and sexual harassment. Further information about University regulations which define and regulate these offences is presented in the Undergraduate Calendar:

http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

Plagiarism is a serious offence and will not be tolerated. Plagiarism is the submission of someone else's writing/ideas/work as your own. All ideas presented which are not your own must be properly referenced. All plagiarism offences result in mandatory reporting to the Dean's office. You will often be working collaboratively to prepare for an assignment and possibly to collect data, but unless you receive specific written instructions to do otherwise, ALWAYS write your assignments and tests individually. Never include others’ writing or other materials into your work without proper attribution.

Readings:

Journal, conference and textbook readings will be assigned. Students will prepare and present summaries of readings and their associated concepts in class. Readings supporting these presentations will be chosen in cooperation with the instructor.

I have copies of several other useful textbooks available for borrowing, as does the library.

Academic Accommodations:

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
Accommodation for Student Activities: write to the professor 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 Accommodation for Student Activities.

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. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).