

Winter 2020 - Introduction to GIS - GEOG5804

Department of Geography and Environmental Studies

Instructor: Koreen Millard koreenmillard@cunet.carleton.ca

Workshop period: Mondays 8:35 - 11:35

Workshop Location: Loeb A200

Office: Loeb A301D

office hours: Wednesdays time TBD

TA: TBD

Office hours: TBD

Email:

I. Course description: GIS for students with no previous experience. Includes data formats and structures, input/output and analysis capabilities, and GIS applications.

This is a first course in Geographic Information Systems (GIS) for graduate students who have not taken undergraduate courses in GIS but may wish to use the technology in their thesis work. The student will use a simple-to-learn, yet powerful, raster/vector-based GIS package (ArcGIS with various extensions) . The lectures serve as an introduction to some of the concerns on the nature of geographic data, principles of GIS and map analysis. Topics will include an analysis of data in a spatial context; database structures for GIS; data query, summary and presentation; cartographic representation and creation of GIS databases for analysis. The student will learn how to compile and work with spatial databases and use them in an area of spatial analysis of interest to them. The course will be delivered as a 3 hour workshop. The course will be very hands-on and a certain degree of familiarity with Windows operating system is assumed. It is also assumed that students will be able to use word processors and other utilities (Acrobat Reader, Winzip, Notepad, Wordpad, Explorer etc). Students deficient in these areas will be expected to gain confidence in using these applications on their own.

***The topics listed in the course outline below are subject to change. Within the first few weeks of the semester, I will gather information about what aspects of GIS you will need to use in your research and aim to focus on the aspects that will be useful to you. There will be several “in class exercises” that require attendance and participation. These are designed to allow self and peer evaluation of a variety of topics, but not all topics may be directly applicable to your own research. The final project topic will be chosen by you in consultation with the instructor and should be related/relevant to your thesis research.

II. Preclusions:

III. Learning Outcomes:

- Use theoretical knowledge to undertake basic GIS analysis
- Understand and use GIS project planning methodologies

IV. Texts: none, readings will be assigned and provided in PDF format

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V. Course calendar (**tentative: dates and topics subject to change**):

lecture date	Workshop topic	Due in Workshop
Jan 6	welcome + intro to course	
Jan 13	Earth models, Projections and coordinate systems	
Jan 20	GIS data models (raster vs vector)	
Jan 27	Introduction to cartographic design	Lab 1: GIS data models
Feb 3	Vector data, spatial data queries, SQL, joins	
Feb 10	Vector GIS tools and toolboxes	Lab 2: Cartography
Feb 17	<i>Winter break</i>	
Feb 24	<i>Lab test</i>	
March 2	Raster data analysis	Lab 3: Spatial Queries and GIS tools
March 9	Basics of Field data collection and GPS	
March 16	Georectifying data and working with imagery	
March 23	Work on final project	
March 30	wrap up	Final Project

VI. Evaluation:

3 labs @ 30% (variable weighting)
In-class Participation/Exercises - 20%
1 practical lab test @ 20%
final project @ 30%

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.

Late Policy: A hard copy of all lab assignments must be handed in to your TA or instructor no later than the **BEGINNING** of the scheduled meeting on the assignment due date, unless otherwise stated on the assignment sheet or syllabus. **No late assignments will be accepted**, with the exception of the case of a medical issue or if you have already arranged for an academic accommodation as described in subsequent sections of this syllabus. In such cases you must make arrangements with the course instructor at least 24 hours prior to the due date and provide 3rd party documentation to her within 5 days of the due date verifying the particular circumstance leading to the late submission. It is your responsibility to ensure that the instructor or TA receive your submitted hard copies. If you are unable to submit an assignment in person, it is recommended that you email the instructor or TA with a digital version in addition to a hard copy left in the assignment drop-slot on the door of the departmental mail room. However, this option should only be considered as a last resort.

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Lecture/Lab attendance: While attendance to lectures and labs is not recorded, it is **highly recommended that you attend all sessions**. Software demonstrations and one-on-one help will be available but the workshops will also cover theoretical aspects of GIS/Geomatics that will help you with the interpretation of your labs and final project.

VII. Statement on Plagiarism

PLAGIARISM

The University Senate defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.” This can include:

- reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source;
- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings;
- failing to acknowledge sources through the use of proper citations when using another’s works and/or failing to use quotation marks;
- handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs."

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of "F" for the course.

VIII. 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.

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.

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

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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).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/equity/sexual-assault-support-services>

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. 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.

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>