

Winter 2021 - Geospatial Analysis - GEOM3005  
Department of Geography and Environmental Studies  
Carleton University

**Academic Year:** Winter 2021

**Course Title:** Geospatial Analysis

**Department:** Department of Geography and Environmental Studies

**Course number:** GEOM 3005

**Instructor:** Dipto Sarkar ([dipto.sarkar@carleton.ca](mailto:dipto.sarkar@carleton.ca))

**I. Course description:** An advanced course in geospatial analysis theory and practice; geoprocessing; geo-visualization; geostatistics; spatial modelling; working with spatio-temporal data structures; advanced site-suitability and network analysis.

**II. Prerequisites:** None

**III. Learning Outcomes:** By the end of this course, students will be able to:

- Critically evaluate spatial analysis tools
- Perform spatial analysis operations in GISystem with special attention to parameters
- Design and execute spatial analysis projects
- Find, manipulate, and use appropriate open data

**IV. Texts:** All documentation and course materials will be provided as needed through cuLearn. There are no definitive texts which will suit all purposes. Readings are taken from a variety of sources, any GIS-related texts are useful.

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

Week	Tuesday	Thursday
1. January 12 & 14	Class set-up & Recap of basic concepts	Lab 0.1: Boot Camp
2. January 19 & 21	Distance Operations	Lab 1: Location Allocation
3. January 26 & 28	Distance Operations Contd.	Lab1 Contd.
4. February 2 & 4	Interpolation	Lab 1 Contd.
5. February 9 & 11	Kriging	Lab2: Interpolation
Break		
6. February 23 & 25	Kriging Contd.	Lab 2 Contd.
7. March 2 & 4	Multi-Criteria Decision Analysis	Lab3: Kriging
8. March 9 & 11	PROJECT PROPOSALS DUE	Lab 3 Contd.

9. March 16 & 18	Proposal Discussion (by appointment)	Lab 4: Zombie Apocalypse
10. March 23 & 25	Lab 4 Contd.	Lab 4 Contd.
11. March 30 & April 1	Work on Project	Work on Project
12. April 6 & 8	Work on Project	PROJECT SUBMISSION
13. April 13	Buffer Day	

## VI. Evaluation:

- Labs
  - Lab 0: 5%
  - Lab 1-3: 10% each
  - Lab 4: 20%
- Project
  - Proposal: 10%
  - Execution and Report: 15%
  - Portfolio: 10%
- Participation: 10%
  - Class/Discussion Board/Twitter

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:** All submissions are online at cuLearn. No late assignments will be accepted, with the exception of medical issues/illness 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. 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 cuLearn, it is recommended that you email the instructor or TA with a copy. However, this option should only be considered as a last resort.

**Lecture/Lab attendance:** This module is delivered in a blended manner. While attendance to synchronous sessions is not recorded, it is highly recommended that you attend all sessions.

## VII. Statement on 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. Requests for Academic Accommodations**

### **Academic Accommodations/Deferred Assignments Section**

Carleton University has suspended the need for a doctor's note or medical certificate until further notice when requesting academic accommodation related to COVID-19. Students should complete the self-declaration form available on the Registrar's Office website to request academic accommodation for missed course work including exams and assignments. Here is the link to the form: <https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf>. For more information about deferrals for final exams/take-home exams please see these websites: <https://carleton.ca/registrar/deferral/> and <https://stuapps.carleton.ca/sarms/registrar/deferral>. Please note that students may also submit a COVID-19 self-declaration form instead of a medical note for these deferrals.

Students are encouraged to connect directly with their instructors to discuss required accommodations arising from the COVID-19 situation. Equity and Inclusive Communities and Academic Advisors can also be reached if students are unable to reach out to instructors directly.

The Senate has approved the optional conversion of one 0.5 credit passing grade to Satisfactory (SAT) for the Winter 2021 term. SAT/UNS grades are not used in the calculation of CGPA, which means that changes in academic performance due to the current disruption will not affect students' permanent records. More information can be found at:

<https://carleton.ca/academicadvising/faqs-about-sat-uns/>.

### ***Religious Observation***

A request should be made in the first two weeks of the academic term, or as soon as possible where the scheduling of an event or activity conflicting with a religious obligation does not appear in the course outline or calendar. A list of multi-faith holy days is accessible through the [Equity Services website](#). Instructors can also contact Equity Services to confirm the eligibility of a religious event or practice.

### ***Pregnancy and/or Parental Leave***

Requests for parental leave must be made in writing to the Registrar's Office, or in the case of graduate students, to the Office of the Dean of Graduate and Postdoctoral Affairs.

A student who is pregnant may request a temporary modification to her program (e.g., laboratory or field work). The student should meet with the instructor(s). The department chair/director

and the faculty dean can assist in the discussion. An Equity Services advisor can also be consulted if a student has questions about pregnancy and/or parental leave.

### ***Students with Disabilities***

Carleton is strongly committed to providing access and accommodation for all individuals with identified and duly assessed disabilities. The university has a ***[Senate-approved policy on academic accommodation](#)*** that forms part of its human rights policy. The policy promotes efforts to accommodate students with disabilities so that they will have the opportunity to meet learning outcomes and be fairly evaluated in their performance. In no case, however, does academic accommodation negotiate away, lower, or remove the academic standards and learning outcomes of any course or program, rule, regulation, or policy at the university.

Some students with disabilities may require special accommodations for tests and exams. In these cases, students must present you with a signed accommodation form from the Paul Menton Centre detailing their accommodation needs well in advance of the date of an exam. A copy of the ***[Paul Menton Centre accommodations policy can be found here](#)***.

### ***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 ***[carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)***.

### ***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. Please contact your instructor 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 policy](#)***.

### ***Contacts***

<b>Equity Services</b> 503 Robertson Hall 613-520-5622 <a href="mailto:equity@carleton.ca">equity@carleton.ca</a> <a href="http://carleton.ca/equity">carleton.ca/equity</a>	<b>Paul Menton Centre</b> 501 University Centre 613-520-6608 <a href="mailto:pmc@carleton.ca">pmc@carleton.ca</a> <a href="http://carleton.ca/pmc">carleton.ca/pmc</a>
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