

Soil Properties GEOG 3108A**[0.5 credit]****Fall 2023**

Lecture: Mon 11:35 – 13:25

Labs: A02 Tues 8:35, A03 Tues 14:35

Instructor: Elyn Humphreys, <elyn.humphreys@carleton.ca>

Office hours: Anytime you catch me free at my office on Monday 10:00 – 11:00; or please email me to make an appointment for an in-person or zoom meeting.

Teaching Assistant: TBD

1. Course Description:

This course will introduce you to the fundamentals of soil science, with emphasis on the physical and chemical properties of the solid (mineral and organic), liquid, and gas phases of soils. We will explore these soil properties & the role soil plays in our lives today from food production to climate change.

2. Preclusions: none**3. Texts:**

Course textbook: Krzic, M., Walley, F.L., Diochon, A., Paré, M.C., & Farrell, R.E. (Eds.) 2021. *Digging into Canadian soils: An introduction to soil science*. Pinawa, MB: Canadian Society of Soil Science.

<https://openpress.usask.ca/soilscience/>

All course materials will be made available on Brightspace*

*Student or professor materials created for this course (including presentations and posted notes, labs, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

4. Course Calendar:

Tentative schedule:

Week	Lecture	Lab
<i>Sept 6-8</i>	<i>No class this week</i>	<i>No labs this week</i>
W1. Sept 11-15	L1. Introduction/ Degradation of Soil Physical Properties – part 1	<i>No labs Sept 12</i> Lab 1. (Weekend field trip to Just Food Farm in Ottawa. <i>Lab 1 completed during field trip / Alternative written lab available if you cannot make it. Rain date is Sept 17.</i>)
W2. Sept 18-22	L2. Degradation of Soil Physical Properties – part 2	Lab 2.
W3. Sept 25-29	L3. Degradation of Soil Physical Properties (Water Availability) – part 3	<i>No lab Sept 26 - Alternative Lab 1 due</i>
W4. Oct 2-6	L4. Degradation of Soil Physical Properties (Erosion)– part 4	Lab 3. <i>Lab 2 due</i>
<i>Oct 9-13</i>	<i>No class this week (Thanksgiving Holiday)</i>	<i>No labs this week</i>

W5. Oct 16-20	L5. Quick Clay – part 1	Lab 4. <i>Lab 3 due</i>
<i>Oct 23-27</i>	<i>Reading Break – no lectures this week</i>	<i>No labs this week</i>
W6. Oct 30-Nov 3	L6. Quick Clay – part 2	<i>No lab Oct 31 - Lab 4 due</i>
W7. Nov 6-10	Midterm test	Lab 5.
W8. Nov 13-17	L7. Organic farming & soil fertility– part 1	<i>No lab Nov 14</i>
W9. Nov 20-24	L8. Organic farming & soil fertility– part 2	Lab 6. <i>Lab 5 due</i>
W10. Nov 27-Dec 1	L9. Organic farming & soil fertility– part 3	Lab 7. <i>Lab 6 due (Lab 7 completed during lab time)</i>
W11. Dec 4-8	L10. Arctic carbon and climate change L11. Soil Formation (Friday Dec 8 follows a Monday schedule)	<i>No labs this week</i>

5. Evaluation:

In-class activities/quizzes	8%	
Laboratory assignments (7)	40%	
Special Topic presentation	8%	
Mid-term exam	20%	
Final exam	24%	(held during the exam period)

In-class participation: To receive these marks, you must be present in-class (no make-up activities/quizzes will be offered). There will be 11 lecture sessions to earn these marks (1% per assignment).

Laboratory assignments: Seven assignments will help you further develop the concepts introduced during the lectures. Each lab assignment will be given equal weight towards the final lab grade.

Special topic presentation: You will present a special interest soil topic during the lecture periods starting Oct 2. Signup is available through Brightspace and must be completed by midnight, Sept 25 or I will assign you a time slot. Example topics include soil & sports, environmental problems/solutions, weird/interesting soil phenomena, soils and natural disasters, food production, soil in the city (remediation, construction), soil careers, etc. I will present an example Sept 25. For ideas, google “soil in the news” or visit the online text book “Can You Dig It!” sections. Upload your presentation slides as pdf (max 5) by midnight the day before your presentation (lateness policy applies). You have 5 min to present your topic. It must include source references and one question for the class related to soil properties that we have discussed to date (e.g. short answer or multiple choice or true or false).

Policy on collaboration and AI: Collaboration is encouraged while working through the assignments, but each student must hand in their own individually prepared assignment. In addition, any use of generative AI tools (e.g. Chat GPT) to produce assessed content in this course is considered a violation of academic integrity standards. See also statement on plagiarism below.

Policy on lateness: Lab assignments will normally be submitted through Brightspace on the due date/time noted on the assignment. Late assignments will be penalized by 5% of the total value of the assignment for every additional day beginning immediately at the deadline and will not be accepted after assignments have been graded and returned. Extensions may be granted for legitimate reasons including short-term incapacitation. See section 8 below to request informal accommodation due to short-term incapacitation.

Exams: These will be limited time and include multiple choice and short paragraph answers.

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.

6. Statement on Plagiarism:

Plagiarism will not be tolerated. Students should consult the [Academic Integrity Policy](#).

The University Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.*” This includes 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. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, art works, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and
- failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

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 or even suspension or expulsion from the University.

7. Statement on Student Mental Health

As a University student you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. Here is a list that may be helpful:

Emergency Resources (on and off campus): <https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

Carleton Resources:

- Mental Health and Wellbeing: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

Off Campus Resources:

- Distress Centre of Ottawa and Region: (613) 238-3311 or TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>
- Empower Me: 1-844-741-6389, <https://students.carleton.ca/services/empower-me-counselling-services/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>
- The Walk-In Counselling Clinic: <https://walkincounselling.com>

8. Requests for Academic Accommodations

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

Informal accommodation due to short-term incapacitation: If you require an extension for assignments or the midterm, please contact me in advance of the deadline and include in your request the Self-Declaration for Academic Considerations form (<https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf>). Note: final exam deferrals must be arranged through the Registrar's Office (<https://carleton.ca/registrar/deferral>).

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 accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).

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 [click here](#).

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, please request your accommodations for this course through the [Ventus Student Portal](#) 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*). Requests made within two weeks will be reviewed on a case-by-case basis. For final exams, the deadlines to request accommodations are published in the [University Academic Calendars](#). 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 will 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>