

**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. Prerequisites:** 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 3-6</i>	<i>No class this week</i>	<i>No labs this week</i>
W1. Sept 9-13	L1. Overview & Introduction	Lab 1. (Optional Saturday, Sept 14 field trip to Just Food Farm in Ottawa. <i>Lab 1 completed during field trip / Alternative written lab available</i> )
W2. Sept 16-20	L2. Degradation of Soil Physical Properties	Lab 2.
W3. Sept 23-27	L3. Degradation of Soil Physical Properties (Water Availability)	<i>No lab this week - Alternative Lab 1 due</i>
W4. Sept 30-Oct 4	L4. Degradation of Soil Physical Properties (Erosion)	Lab 3. <i>Lab 2 due</i>
W5. Oct 7-11	L5. Quick Clay – part 1	Lab 4. <i>Lab 3 due</i>
<i>Oct 4-18</i>	<i>No lecture or labs this week (Thanksgiving Holiday)</i>	
<i>Oct 21-25</i>	<i>No lecture or labs this week (Reading Break)</i>	
W6. Oct 28-Nov 1	L6. Quick Clay – part 2	<i>No lab this week - Lab 4 due</i>
W7. Nov 4-8	Midterm test	Lab 5.
W8. Nov 11-15	L7. Organic farming & soil fertility	Lab 6.
W9. Nov 18-22	L8. Organic farming & soil fertility (CEC)	<i>No lab this week - Lab 5 due</i>
W10. Nov 25-Nov 29	L9. Organic farming & soil fertility (pH)	Lab 7. <i>Lab 6 due (Lab 7 completed during lab time)</i>
W11. Dec 2-6	L10. Organic farming & soil fertility (soil biology)	<i>No labs this week</i>

	L11. Soil Genesis (Friday Dec 6)	
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**5. Evaluation:**

In-class activities/quizzes	8%		
Laboratory assignments (7)	40%		
Special Topic presentation	8%		
Mid-term exam		24%	(Nov 4 in class)
Final exam	20%		(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 class periods to earn these marks (earn up to 1% per class period).

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 7. Signup is available through Brightspace and must be completed by midnight, Sept 30 or you will be assigned 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 30. For ideas, google “soil in the news” or visit the online textbook “Can You Dig It!” sections. Upload your presentation slides as pdf or powerpoint (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 10% 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. See section 8 below to request accommodation.

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

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the *Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances*, are outlined on the Academic Accommodations website ([students.carleton.ca/course-outline](https://students.carleton.ca/course-outline)).