

**Soil Properties GEOG 3108A**

**[0.5 credit]**

**Fall 2021**

Lecture: Weekly recorded lectures (Mon 12:35-14:25)

Labs: A02 Tues 11:35, A03 Tues 14:35 – in person

A04 Thurs 8:25 - synchronous online tutorial

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

Office hours: Please email me to make an appointment.

Teaching Assistant: Rachel Mandryk

**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.

**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 recorded lecture slides, reading assignments, and laboratory assignments 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:*

**Sept 13:** Lecture 1. Introduction/ Degradation of Soil Physical Properties – part 1

*No labs this week*

*Sept 18 Lab 1 – Field trip to Just Food Farm in Ottawa/Alternative online lab available. Rain date is Sept 19.*

**Sept 20:** Lecture 2. Degradation of Soil Physical Properties – part 2

*No labs this week*

**Sept 27:** Lecture 3. Degradation of Soil Physical Properties (Water Availability) – part 3

*Lab 2*

**Oct 4:** Lecture 4. Degradation of Soil Physical Properties (Erosion)– part 4

*Lab 3*

**Oct 11:** **Stat Holiday**

*No lecture or labs this week*

**Oct 18:** Lecture 5. Quick Clay – part 1

*Lab 4*

**Oct 25:** **Reading Break**

*No lecture/no labs this week*

- Nov 1:** Lecture 6. Quick Clay – part 2  
*No labs this week*  
*\*Self-study assignments #1-6 due before Nov 5, 4 pm.*
- Nov 8:** **Midterm test**  
*No lecture/no labs this week*
- Nov 15:** Lecture 7. Organic farming & soil fertility– part 1  
*Lab 5*
- Nov 22:** Lecture 8. Organic farming & soil fertility (pH)– part 2  
*Lab 6*
- Nov 29:** Lecture 9. Organic farming & soil fertility (soil biology) – part 3  
*Lab 7*
- Dec 6:** Lecture 10. Arctic carbon and climate change  
*No labs this week*
- Dec 10:** (Last day of classes/follows Monday schedule)  
 Lecture 11. Soil formation  
*No labs this week*  
*\*Self-study assignments #7-10 due before Dec 10, 4 pm.*

### 5. Evaluation:

Self-study assignments (10)	10%	
Laboratory assignments (6)	36%	
Lab participation (7)	3.5%	
Special topic presentation	10%	
Special topic signup	0.5%	
Mid-term exam	20%	
Final exam	20%	(held during the exam period)

Self-study assignments: Ten self-study assignments are based on the readings and lecture material. These will be automatically graded. To receive marks, you must receive a grade of 50% or more and submit the assignment by the due date (1% per assignment).

Laboratory assignments: Six 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. Collaboration is encouraged while working through the assignments, but each student must hand in his or her own, individually prepared assignment. See statement on plagiarism below.

Policy on lateness: Lab assignments will be submitted through Brightspace on the due date noted on the assignment. Late assignments will be penalized by 5% of the total value of the assignment for every additional day and will not be accepted after assignments have been graded and returned. Extensions may be granted for legitimate reasons. Please contact the instructor (Elyn Humphreys) by email before the deadline when possible.

Participation marks: During each in person or synchronous tutorial/lab session, participation will be recorded and earn marks of 0.5% per session towards the final grade.

Special topic presentation: You will present a special interest soil topic during the tutorial sessions starting week 4. Signup is available through Brightspace and must be completed by midnight, Sept 27 (for 0.5% mark). 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 Week 3. For ideas, google “soil in the news” or visit the “web links” tabs at [http://wps.prenhall.com/chet\\_brady\\_natureandp\\_14/](http://wps.prenhall.com/chet_brady_natureandp_14/). 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). Students will post an answer to the TA via chat for participation marks.

Exams: These will be limited time, open book 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. COVID-19

All members of the Carleton community are required to follow COVID-19 prevention measures and all mandatory public health requirements (e.g. wearing a mask, physical distancing, hand hygiene, respiratory and cough etiquette) and [mandatory self-screening](#) prior to coming to campus daily.

If you feel ill or exhibit COVID-19 symptoms while on campus or in class, please leave campus immediately, self-isolate, and complete the mandatory [symptom reporting tool](#). For purposes of contact tracing, attendance will be taken in all classes and labs. Participants can check in using posted QR codes through the cuScreen platform where provided. Students who do not have a smartphone will be required to complete a paper process as indicated on the [COVID-19 website](#).

All members of the Carleton community are required to follow guidelines regarding safe movement and seating on campus (e.g. directional arrows, designated entrances and exits, designated seats that maintain physical distancing). In order to avoid congestion, allow all previous occupants to fully vacate a classroom before entering. No food or drinks are permitted in any classrooms or labs.

For the most recent information about Carleton’s COVID-19 response and required measures, please see the [University’s COVID-19 webpage](#) and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact [covidinfo@carleton.ca](mailto:covidinfo@carleton.ca)

Please note that failure to comply with University policies and mandatory public health requirements, and endangering the safety of others are considered misconduct under the [Student Rights and Responsibilities Policy](#). Failure to comply with Carleton’s COVID-19 procedures may lead to supplementary action involving Campus Safety and/or Student Affairs.

## 7. 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;
- 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.

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

**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](mailto: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 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>