1 Course Details

1.1 Calendar Description

This course is an introduction to the principles of soil science - the origin of soils, their classification and interpretation in natural and modified environments. Soil will be studied as a product of the natural environment, with a focus on formation processes and changes which occur when it is modified through use. A variety of uses including agriculture, forestry, recreation, and urban development will be considered.

Equate: SOIL*2010
Restrictions: AGR*2320.

1.2 Course Description

The course will provide an introduction to the nature and properties of soil, and use this information to understand management practices that will sustain the productivity of these resources and enhance the quality of the ecosystems of which they are a part. The course will be presented in a lecture-lab-tutorial manner, with 3 lectures and a 2-hour lab-tutorial per week. The laboratory will provide an opportunity to reinforce concepts discussed in the lecture through observations, selected exercises and assigned reading.

1.3 Timetable

Lectures: Virtual, Tuesday and Thursday 8:30 - 9:50

Labs:

Virtual Monday 8:30 -10:20
Virtual Tuesday 2:30 - 4:20

Virtual, Wednesday 12:30 – 2:20

Virtual, Wednesday 2:30 – 4:20

Virtual, Thursday 2:30 – 4:20

1.4 Final Exam
December 8 at 2:30 - 4:20
Room TBA

2 Instructional Support

2.1 Instructional Support Team

Instructor: John Lauzon
Email: lauzonj@uoguelph.ca
Telephone: +1-519-824-4120 x52459
Office: ALEX 219

During the course, your instructor will interact with you on various course matters on the course website using the following ways of communication:

- **Announcements**: The instructor will use Announcements on the Course Home page to provide you with course reminders and updates. Please check this section frequently for course updates from your instructor.
- **Ask Your Instructor Discussion**: Use this discussion forum to ask questions of your instructor about content or course-related issues with which you are unfamiliar. If you encounter difficulties, the instructor is here to help you. Please post general course-related questions to the discussion forum so that all students have an opportunity to review the response. To access this discussion forum, select Discussions from the
Tools dropdown menu.

- **Email:** If you have specific questions, a conflict that prevents you from completing course requirements, or have a question concerning a personal matter, you can send your instructor a private message by email. The instructor will attempt to respond to your email within 24 hours.
- **Video Call:** If you have a complex question you would like to discuss with your instructor, you may book a video meeting on Teams or webex. Video meetings depend on the availability and are booked on a first come first served basis.

### 2.2 Teaching Assistants

<table>
<thead>
<tr>
<th>Teaching Assistant</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christine Dulal</td>
<td><a href="mailto:cdulalwh@uoguelph.ca">cdulalwh@uoguelph.ca</a></td>
</tr>
<tr>
<td>Andrew Hector</td>
<td><a href="mailto:ahector@uoguelph.ca">ahector@uoguelph.ca</a></td>
</tr>
<tr>
<td>Ryan Lafluer</td>
<td><a href="mailto:lafleurr@uoguelph.ca">lafleurr@uoguelph.ca</a></td>
</tr>
<tr>
<td>Evan Mayer</td>
<td><a href="mailto:mayere@uoguelph.ca">mayere@uoguelph.ca</a></td>
</tr>
<tr>
<td>Moanzame Mesgar</td>
<td><a href="mailto:mmesgar@uoguelph.ca">mmesgar@uoguelph.ca</a></td>
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</table>

### 3 Learning Resources

#### 3.1 Required Resources

**Course Technologies and Technical Support (Other)**

*System and Software Requirements*

*This course will use a variety of technologies including;*
• CourseLink (main classroom)
• Webex
• Zoom
• Teams (via Office 365)

To help ensure you have the best learning experience possible, please review the list of system and software requirements.

https://opened.uoguelph.ca/student-resources/system-and-software-requirements

CourseLink System Requirements

You are responsible for ensuring that your computer system meets the necessary system requirements. Use the browser check tool to ensure your browser settings are compatible and up to date. (Results will be displayed in a new browser window).

http://spaces.uoguelph.ca/ed/system-requirements/
https://courselink.uoguelph.ca/d2l/systemCheck

CourseLink
This course is being offered using CourseLink (powered by D2L's Brightspace), the University of Guelph's online learning management system (LMS). By using this service, you agree to comply with the University of Guelph's Access and Privacy Guidelines. Please visit the D2L website to review the Brightspace privacy statement and Brightspace Learning Environment web accessibility standards.

http://www.uoguelph.ca/web/privacy/ https://www.d2l.com/legal/privacy/
https://www.d2l.com/accessibility/standards/

Technical Support

If you need any assistance with the software tools or the CourseLink website, contact CourseLink Support.

Email: courselink@uoguelph.ca
Support Hours (Eastern Time):

Monday thru Friday: 8:30 am–8:30 pm

Saturday: 10:00 am–4:00 pm

Sunday: 12:00 pm–6:00 pm

Zoom

This course will use Zoom for lectures. Check your system requirements to ensure you will be able to participate.

https://opened.uoguelph.ca/student-resources/system-and-software-requirements

3.2 Recommended Resources

The nature and properties of soils (Textbook)

The Canadian System of Soil Classification (Textbook)

3.3 Other Resources

- Other assorted papers to be listed on the course reserve, online resources listed on CourseLink, and in the laboratory outlines.
- Please view Courselink regularly for course slide sets and other useful materials and information. The textbook can be found on the course reserve at the library

3.3 Library Access

As a student, you have access to the University of Guelph’s library collection, including both physical and electronic materials. For information on checking out or couriering physical library items, accessing electronic journals and returning items to the library, visit the library’s website.

If you are studying off campus and would like to access the library’s electronic resources, use the Off Campus Login and login using your Single Sign On credentials or using your last name and library barcode.

https://www.lib.uoguelph.ca/

https://www.lib.uoguelph.ca/campus-login

Ares

For this course, you will be required to access course reserve materials through the University
of Guelph McLaughlin Library. To access these items, select Ares on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit How to Get Course Reserve Materials.

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621
Email: libres2@uoguelph.ca

https://www.lib.uoguelph.ca/find/course-reserves-ares/how-get-course-reserve-material

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4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. An introductory understand of how soils form gathered from information provided in lectures and laboratories
2. Be able to describe a soil profile from information in the lectures and laboratories as well as study of a specific field study (major project)
3. An introductory understanding of the Canadian system of classification focusing on the soil orders gathered from information provided in lectures and laboratories.
4. Have an introductory understanding of the geology of Southern Ontario important for soil formation from information in the lectures and laboratories as well as study of a specific field study (major project)
5. An introductory understanding of the physical nature of soil from information in the lectures and laboratories as well as study of a specific field study (major project)
6. An introductory understanding of water behavior, availability and budgeting in soils
7. An introductory understanding of soil chemical properties (clay mineralogy, Cation
exchange and pH) gathered from information provided in lectures and laboratories

8. An introductory understanding of plant macronutrient cycling in soils gathered from information provided in lectures and laboratories

9. An introductory understanding of resource use and management from information in the lectures and laboratories as well as study of a specific field study (major project)

10. Improved ability to apply mathematical skills to quantify soil processes and/or define management.

11. Improved written communication skills

12. Apply aspects of economics to the principals soil management

5 Teaching and Learning Activities

5.1 Lecture

Unit 1

Topics: Introduction

Unit 2

Topics: Soil Characteristics

References: Sections 4 – 4.4 of Brady and Weil 13th to 15th ed

- Composition of soils
- Soil description
- Soils in the landscape

Unit 3

Topics: Soil Developments and Classification

References: The Canadian System of Soil Classification, 3rd edition

- Soil development
- Principles of soil classification
- The Canadian system of classification
- Implications for identifying land use/management options
Unit 4

Topics: Soil Physical Properties

References: Weil and Brady 15th ed pages130 -155, 161 - 175

All editions - Sec 4.0 – 4.5, 4.7 – 4.8

• Texture
• Structure (bulk density, influence of management)
• Implications for identifying land use/management options

Unit 5

Topics: Soil Water

References: Weil and Brady Chapters 5.0 - 5.9 and 6.0 - 6.3, 6.6-6.7, 6.9

• Characteristics of water influencing its behavior in soil
• Water potential
• Water content
• Water release curve
• Water flow
• Water available to plants
• Water budgets
• Implications for identifying land use/management options

Unit 6

Topics: Chemical and Mineralogical Characteristics of Soils

References: Weil and Brady 8.1 – 8.3, 8.6, 8.8, 8.9, chapter 9,

Chapter 11 – 11.6, 11.8 – 11.10

Chapter 12 – 12.3, 12.7
• Clay minerals
• pH
• Organic matter

Unit 7

Topics: Plant Nutrients

References: Weil and Brady Chapter 13.0 -13.15

Chapter 14

• Macro versus micro nutrients
• N cycle, organic N sources, fertilizer N
• P cycle, fertilizer P
• K cycle, K fertilizer
• Deficiency symptoms
• Estimating plant/crop requirements
• Implications for identifying land use/linkage/management options

Unit 8

Topics: Resource Use

• Resource concepts
• Soil degradation
• Canada land inventory
• Land use

5.2 Lab

Topics: Soil Formation and Classification

Topics: Soil Physical Properties

Topics: Water in Soils
5.3 Laboratory/Project Schedule

Please note that the exact dates of laboratories may change depending on lecture scheduling. In addition, the final lab on resource use may not be possible depending on scheduling. Check CourseLink for lab assignments and exact meeting dates.

5.4 Lab assignments

Dropbox Submissions

Assignments should be submitted electronically via the online Dropbox tool. When submitting your assignments using the Dropbox tool, do not leave the page until your assignment has successfully uploaded. To verify that your submission was complete, you can view the submission history immediately after the upload to see which files uploaded successfully. The system will also email you a receipt. Save this email receipt as proof of submission.

Be sure to keep a back-up copy of all of your assignments in the event that they are lost in transition. In order to avoid any last-minute computer problems, your instructor strongly recommend you save your assignments to a cloud-based file storage (e.g., OneDrive), or send to your email account, so that should something happen to your computer, the assignment could still be submitted on time or re-submitted.

It is your responsibility to submit your assignments on time as specified on the Schedule. Be sure to check the technical requirements and make sure you have the proper computer, that you have a supported browser, and that you have reliable Internet access. Remember that technical difficulty is not an excuse not to turn in your assignment on time. Don’t wait until the last minute as you may get behind in your work.

If, for some reason, you have a technical difficulty when submitting your assignment
electronically, please contact your instructor or CourseLink Support.

http://spaces.uoguelph.ca/ed/contact-us/

6 Assessments

6.1 Marking Schemes & Distributions

Unofficial assessment marks will be available in the Grades tool of the course website.

Your instructor will attempt to have grades posted online within 2 weeks of the submission deadline, if the assignment was submitted on time. Once your assignments are marked you can view your grades on the course website by selecting Grades from the Tools dropdown menu on the navbar. Your course will remain open to you for seven days following the last day of the final exam period.

University of Guelph students can access their final grade by logging into WebAdvisor (using your U of G central ID).

https://webadvisor.uoguelph.ca

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<th>Scheme A (%)</th>
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<tr>
<td>Lab assignments</td>
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<td>Final Exam</td>
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<td>Total</td>
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6.2 Assessment Details

Midterm Exam (25%)

Due: Thu, Oct 22, During class time

Lab Assignments (40%)
Date: One week after receiving the assignment, Courselink drop box

Final Exam (35%)
Date: Tue, Dec 8, 2:30 PM - , 4:30 PM, TBA

7 Course Statements

7.1 Grading Policies:

Policy on Late Assignments:

Major reports received late will be penalized 5% per day without an adequate explanation given before the due date. Anything received after the last class day without adequate reason(s) for being late before the due date will receive a grade of zero.

7.2 Course Policy on Group Work:

The major report will be completed by groups of 3 to 4 students and a single report will be provided for each group.

7.3 Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml
8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
https://www.uoguelph.ca/sas
For Ridgetown students, information can be found on the Ridgetown SAS website https://www.ridgetownc.com/services/accessibilityservices.cfm

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community - faculty, staff, and students - to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
https://www.uoguelph.ca/academics/calendars

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19

8.10 Illness

The University will not require verification of illness (doctor's notes) for the fall 2020 or winter 2021 semesters.