

GEOG 412 LEC01 Soil Science

GFC Hours 3-2

Fall 2022 classes: September 6th – December 7th, 2022

Section	Days	Time	Location
LEC 01	TR	12:30-1:45PM	MS217
B01	M	11:00-12:50PM	ES355
B02	T	2:00-3:50PM	ES355
Instructor: Dr. Andrea Freeman		Office: ES 356b	
Telephone:		Email: freeman@ucalgary.ca	
Email communication will be through your UCalgary email address.		Office hours:	

The **Department of Geography** condemns the longstanding and continued injustices against those marginalized by racism, sexism, homophobia, transphobia, classism, xenophobia, able-bodied normativity, mental health profiling, and other forms of prejudice. We are pained by the fact that injustices are unevenly borne. <https://arts.ucalgary.ca/news/anti-racism-statement>

Territorial Acknowledgement

The Department of Geography would also like to acknowledge the traditional territories of the people of the Treaty 7 region in southern Alberta. The City of Calgary is also home to Métis Nation of Alberta, Region III. <https://www.ucalgary.ca/indigenous/cultural-protocol>
The instructor of this course acknowledges her home in Châ Ûpchîchîyen Kudebi, traditional territory of the Îyârhe Nakoda.

Official Course Description

Exploration of soil science including the chemical, physical, and biological properties of soils; soil formation and development, including the classification of soils, and the application of soil science to land use, environmental quality, global change, and sustainable development.

Course Objectives

Students completing this course will be able to describe the formation of soils at the Earth's surface, including the chemical, physical, and biological processes that have acted upon them. They will be able to understand the application of these concepts in the literature and provide initial recommendations on the use of soils in geomorphology, in land use and environmental assessments (including archaeology), and in amendments to soils that promote healthy solutions to global issues and sustainable development practices. Basic analytical skills for soils science will be developed in the laboratory.

Course Learning Outcomes

The Department of Geography is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes to which they contribute, and the expected level of achievement.

Course Learning Outcomes	PLO(s)*	Level(s)**
Articulate understanding of advanced concepts in soil science	1, 5, 7	2,3
Describe elemental and biological processes that act on soil formation	2	1,2
Critically evaluate the literature on soil science as applied in Geography	4, 7, 8	2,3
Compose and participate in written and oral discussion of soil processes	5, 7, 8	2
Conduct basic analyses on soil components	3, 4	1, 2

*PLOs = Program Learning Outcomes: 1 = reflect and communicate diverse human-environment perspectives, 2 = identify and explain human-environment processes, 3 = implement sampling, data collection, analyses and communication methods, 4 = analyze spatial and temporal aspects of human-environment systems, 5 = employ knowledge, arguments, and methodologies for solving human-environment problems, 6 = evaluate geospatial data and manipulate it to create cartographic products, 7 = communicate geographic concepts using oral, written, graphic, and cartographic modes, and 8 = demonstrate literacy skills.

**Levels: 1 = Introductory, 2 = Intermediate, and 3 = Advanced.

Prerequisites

3 units of GEOG 211, 308, 310.

Course Format

- Course, including labs, will be taught in person.
- Missed class due to COVID/Flu: Transmissible viruses can interfere with our daily lives and new symptoms are constantly emerging. If you have symptoms, including fever, sneezing, coughing, sore throat, muscle weakness, and muscle soreness that could be attributed to the flu or COVID, we would appreciate your help in reducing transmission. Options include staying home during infectious periods when symptoms are severe and/or wearing a mask when asymptomatic or when symptoms are unlikely to spread to others. If you find it necessary to stay home, the instructor will send you a video link of appropriate lecture materials from Fall 2020 in lieu of your attendance. It is also appropriate to help one another by sharing notes with friends/classmates who are ailing.
- Meetings with the instructor will normally be held online via Zoom, unless exceptional circumstances arise.

Learning Resources

Weil and Brady. *The nature and properties of soils* (15th edition); generally speaking 12th-14th edition are fine. A list of additional readings for discussions will be posted to D2L.

Assessment Methods

Midterm Tests (x4, 20%, 15%, 5%, 5%)	45%
Readings Questions (5 sets)	10%
Group Presentation on Readings	5%
Participation at Readings Presentations (5 sets)	10%
<i>Total for Lecture</i>	<i>70%</i>

Experiential Lab Attendance and Submission (x4 @2%)	8%
Attendance, self grading and repair (x3 @4%)	12%
Lab Report	10%
<i>Total for Labs</i>	<i>30% (there is an opportunity to receive 2% credit for missed labs by providing a draft of your report and attending the session on Nov 28 or 29; this is NOT extra credit)</i>

- *All components must be attempted to pass the course, but a failing grade on any individual component will not necessarily result in failure of the course. Final course grade will be determined by percentage earned.*
- **There is no Registrar-schedule final exam.**
- No devices will be allowed in examinations.
- A single hand-written (front and back, any font) sheet of paper may be used for crib notes for exams 1 and 2 only.
- All tests will be in class.
- Students needing to defer a test due to illness or other qualified reasons must declare that reason as soon as possible to the instructor. In such cases, deferred tests may be handled online.

Grading System

96 – 100	A+	77 – 80	B	59 – 61	C-
90 – 95	A	71 – 76	B-	55 – 58	D+
86 – 89	A-	65 – 70	C+	50 – 54	D
81 – 85	B+	62 – 64	C	0 – 49	F

It is important to recognize that the University assigns values to these grades:

<https://www.ucalgary.ca/pubs/calendar/current/f-1.html> For example,

A+	Outstanding performance
B-	Approaching good performance
D+	Marginal pass. Insufficient preparation for subsequent courses in the same subject

Flexible Grade Option (CG Grade)

<https://www.ucalgary.ca/pubs/calendar/current/f-1-3.html>

Additional Course Information

Students are expected to attend lab and lecture unless illness or other exceptional circumstances arise.

Examinations (45%):

Examinations will not be comprehensive, but knowledge acquisition in this course is cumulative. Therefore, poor understanding of earlier materials may make it difficult to answer questions correctly on later examinations. Exams are held on the following schedule:

Sept 29, Test 1, (20%): Covers materials from 6 to 27 Sept.

Oct 27, Test 2 (15%): Covers materials from 4-25 Oct.

Nov 22, Test 3 (5%): Covers materials from 1-17 Nov.

Dec 6, Test 4 (5%): Covers materials from 24 Nov to 1 Dec.

Group Presentation (5%):

The class will be split into five (5) groups, each of which will provide a presentation on a set of readings. Each person in the group is expected to prepare and speak to at least one (1) slide in the presentation. Groups will provide their presentation in advance (by 8 am on the day of the presentation) and will also provide a distribution of group work. A rubric for individual grading of your contribution (5%) will be provided.

Attendance at Presentation and Readings Questions (20% each):

Students in the course are expected to attend the presentations of other students. Participation in these presentations along with answers to the readings questions will be worth 4% each. If you cannot attend due to illness or other circumstances, please let the professor know in writing and alternative modes of participation can be arranged. Only approved absences will be given this exception.

Labs (20%)

Students are expected to attend all labs. There are four (4) experiential labs and four (4) collaborative labs. In addition, there is a makeup lab (Nov 21, 22) during which students unable to attend a lab can make up marks by providing a draft of their final report. These marks are NOT considered extra credit.

Experiential Labs (8%)

During these labs, students will learn the basics of performing the analyses. These may be demonstrations or participatory. Students will be provided data and will be expected to answer questions following the lab. Participation and presentation (to the TA) of your lab results in the collaborative session will be worth 2% of your mark for each experiential lab. Data will be used for your final report. It is in your interest to participate in both experiential and collaborative sessions.

Collaborative Lab (12%)

During these labs, you will be given a rubric for the prior lab(s) and asked to self-grade the prior lab(s). Your participation, self-grading, and demonstration that you have fixed any errors in your prior lab(s) will be worth 4% of your grade for each collaborative session.)

Lab Report (10%)

You will be expected to write a lab report. A rubric will be provided. Students are expected to cite relevant literature and use appropriate attribution (citations) for both literature and shared (instructor, TA, peer) materials. Plagiarism will be taken very seriously.

Exams & Deferrals <https://www.ucalgary.ca/registrar/exams>

In the event that a student misses a midterm or any course work due to illness, supporting documentation, such as a statutory declaration may be requested <https://www.ucalgary.ca/pubs/calendar/current/m-1.html>
Please refer to <https://www.ucalgary.ca/registrar/registration/appeals/student-faq> for frequently asked questions concerning the provision of a statutory declaration.

Supplementary Fees

Not applicable.

Referencing Standard

In written work presented in this class, the accepted method for referencing the work of others will be APA.

Important Dates

The last day to drop this course and receive a tuition fee refund is **Thursday, September 15th, 2022**. The last day to add or swap a course for Fall 2022 is **Friday, September 16th, 2022**. The last day to withdraw from this course is **Wednesday, December 7th, 2022**. Please note that the University is closed on Friday, September 30th; Monday, October 10th; and Friday, November 11th, 2022.

For additional detailed course information posted by the instructor, visit the course Desire2Learn page online at <https://d2l.ucalgary.ca/d2l/home>.

Resources and Writing support

Please note writing support resources provided by the Student Success Centre <https://ucalgary.ca/ssc/resources/writing-support> and the library <https://libguides.ucalgary.ca/guides/>

University of Calgary Academic Integrity Policy

Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. The University Calendar includes a statement on the principles of conduct expected of all members of the university community (including students, faculty, administrators, any category of staff, practicum supervisors, and volunteers), whether on or off university property. This statement applies in all situations where members of the university community are acting in their university capacities. All members of the university community have a responsibility to familiarize themselves with the principles of conduct statement, which is available at: www.ucalgary.ca/pubs/calendar/current/k.html.

Plagiarism, Cheating, and Student Misconduct

The University of Calgary is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect.

Academic dishonesty is not an acceptable activity at the University of Calgary, and students are **strongly advised** to read the Student Misconduct section in the University Calendar at: www.ucalgary.ca/pubs/calendar/current/k-3.html. Often, students are unaware of what constitutes academic dishonesty or plagiarism. The most common are (1) presenting another student's work as your own, (2) presenting an author's work or ideas as your own without adequate citation, and (3) using work completed for another course. Such activities will not be tolerated in this course, and students suspected of academic misconduct will be dealt with according to the procedures outlined in the calendar at: <https://www.ucalgary.ca/legal-services/university-policies-procedures/student-academic-misconduct-procedure>

For students wishing to know more about what constitutes plagiarism and how to properly cite the work of others, the Department of Geography recommends that they attend Academic Integrity workshops offered through the Student Success Centre:

<https://www.ucalgary.ca/student-services/student-success/learning/academic-integrity>

Instructor Intellectual Property

Information on Instructor Intellectual Property can be found at <https://www.ucalgary.ca/legal-services/university-policies-procedures/intellectual-property-policy>

Freedom of Information and Protection of Privacy

Freedom of Information and Protection of Privacy (FOIP) legislation in Alberta disallows the practice of having students retrieve assignments from a public place, such as outside an instructor's office, the department office, etc. Term assignments will be returned to students individually, during class or during the instructor's office hours; if students are unable to pick up their assignments from the instructor, they must provide the instructor with a stamped, self-addressed envelope to be used for the return of the assignment.

Posting of Grades and Picking-up of Assignments

Graded assignments will be returned by the instructor or teaching assistant personally during scheduled lecture or laboratory periods, unless they are made available electronically through the course D2L webpage. Grades and assignments will not be available at the Department of Geography's main office and assignments cannot be dropped off at the Department Office.

Academic Accommodations

It is the student's responsibility to request academic accommodations, according to the university policies and procedures listed in the University Calendar.

The student accommodation policy can be found at: <https://www.ucalgary.ca/pubs/calendar/current/b-6-1.html>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure>

Students needing an accommodation based on a protected ground other than disability should communicate this need, preferably in writing to their instructor or the Department Head (email: freeman@ucalgary.ca).

Learning Technologies and Requirements

Accommodation may be made in exceptional circumstances due to sudden illness. If such accommodation requires the use of computer access at home, students are expected to have reliable access to the following technology.

- A computer with a supported operating system, as well as the latest security and malware updates
- A current and updates web browser
- Broadband internet connection

Course evaluations and student feedback

The instructor of this course believes strongly in life-long learning through constructive criticism. Student feedback will be sought at the end of the course through the standard University Student Ratings of Instruction (USRI) and Faculty course evaluation forms.

Accessibility

Visual acuity is particularly important in Soil Science. Lectures are presented orally.

Copyright Legislation

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright <https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy> and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Act.

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness, and academic success and aspires to create a caring and supportive campus community where individuals can freely talk about mental

health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support, or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy website (<http://www.ucalgary.ca/mentalhealth/>).

Students requiring assistance are encouraged to email the **Student at Risk line** if they or others appear to need wellness assistance: sar@ucalgary.ca For more immediate response, please call: 403-210-9355 and select option #2.

Sexual Violence Policy

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. Please see the policy available at <https://www.ucalgary.ca/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy>

Contact Information for Student and Faculty Representation

- Student Union VP Academic 403-220-3911, suypaca@ucalgary.ca
- Students Union Representatives for the Faculty of Arts – 403-220-3913, arts1@su.ucalgary.ca, arts2@su.ucalgary.ca, arts3@su.ucalgary.ca, arts4@su.ucalgary.ca
- Student Ombuds Office information can be found at: www.ucalgary.ca/ombuds/

Emergency Evacuation/Assembly Points

Assembly points for emergencies have been identified across campus. Assembly points are designed to establish a location for information updates from the emergency responders to the evacuees; from the evacuated population to the emergency responders. For more information, see the University of Calgary's Emergency Management website: <https://www.ucalgary.ca/risk/emergency-management>. The assembly point for this room is the Social Sciences Food Court.

Campus Safewalk

Campus Security, in partnership with the Students' Union, provides the Safewalk service, 24 hours a day, to any location on Campus, including the LRT station, parking lots, bus zones, and university residences. Contact Campus Security at 220-5333 or use a help phone, and Safewalkers or a Campus Security officer will accompany you to your campus destination.