



COURSE OUTLINE

1. **Course:** GLGY 571, Engineering Geology - Fall 2020

Lecture 01: TR 08:00 - 09:15 - Online

Instructor	Email	Phone	Office	Hours
Dr Brandon Karchewski	brandon.karchewski@ucalgary.ca	403 220-6678	ES 108	By Appointment

Teaching Assistants:

Susanne Ouellet, *Email:* susanne.ouellet2@ucalgary.ca

Robert Perrin, *Email:* robert.perrin@ucalgary.ca

Online Delivery Details:

Some aspects of this course are being offered in real-time via scheduled meeting times. For those aspects you are required to be online at the same time.

Lectures: The lectures will be *online synchronous* at the registrar-scheduled time (TuTh 8:00AM - 9:15AM Mountain/Calgary Time) via Zoom (links available via course D2L page). These will also be recorded and available on the course D2L page (usually within 24 hours after the class) in case you are unable to attend class at the scheduled time for any reason. You are encouraged to attend the online synchronous class sessions as they will involve interaction/discussion about the content.

Labs: The labs will be *online asynchronous*. You do not need to attend live lab sessions at a regularly scheduled time each week. The lab descriptions/videos/exercises/assignments will be uploaded to D2L for you to work through at your own pace. As you work through the labs, you are welcome to ask questions of the instructor and/or TAs via email or schedule an online Zoom meeting to discuss.

Assessments: All course assessments will be *online asynchronous*. Lab assignments will be submitted electronically via the Dropbox on D2L (see course schedule on D2L page for due dates). Quizzes will be posted to D2L throughout the term and you will typically have one week to complete multiple attempts of each quiz. Presentations will take place via Zoom during the online lecture sessions. The "final exam" will be posted at the beginning of the final exam period as a series of D2L quizzes covering similar topics to the term quizzes; again, you will be given one week to complete multiple attempts of each quiz.

Course Site:

D2L: GLGY 571 L01-(Fall 2020)-Engineering Geology

Note: Students must use their U of C account for all course correspondence.

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

Prerequisite(s):

Geology 353 and 445.

Calendar Description:

The role of geology in engineering problems. Characterization of rock, rock masses and soil. Mechanical behaviour of geologic material. Investigation methods and case histories.

Course Learning Objectives:

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

1. *Describe* the physical and mechanical properties of soils and rock relevant to engineering classification of these materials.
2. *Explain* the concept of effective stress and its importance to the deformation and strength of soil and rock.
3. *Compare and contrast* criteria used to describe the strength of soil and rock, with particular regard to the influence of fabric and rock mass characteristics.

4. *Describe and perform* laboratory tests for physical and mechanical properties of soil and rock.
5. *Describe* in situ methods of evaluating the properties of soil and rock.
6. *Communicate* the results of geotechnical calculations and laboratory investigations to peers in the geoscience and geotechnical engineering community.

3. Grading:

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Assignments and Labs	40%	See Schedule on D2L
Quizzes	20%	See Schedule on D2L
Project/Presentation	10%	See D2L for details
Final Exam	30%	Posted on D2L during final exam period

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	95 %	90 %	85 %	80%	75%	70 %	65 %	62%	60%	55 %	50 %

4. Missed Components Of Term Work:

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. Scheduled Out-of-Class Activities:

There are no scheduled out of class activities for this course.

6. Course Materials:

Recommended Textbook(s):

Luis Gonzalez de Vallejo, Mercedes Ferrer, *Geological Engineering*: CRC Press, 2011.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required 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 updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

7. Examination Policy:

All exams and quizzes are “open book”. During an exam or quiz, you may consult any course materials including notes and previous exams or quizzes *which you have made yourself*. You may not consult exams or quizzes from previous years during a quiz or exam. You may access the internet, but you may not use email or other forms of communication (written, verbal, electronic) except to communicate with the course instructor or TAs during an examination. The use of calculators or computers for computation is encouraged; a scientific calculator such as the Casio fx-991 or one with similar functionality is recommended and use of spreadsheet tools such as MS Excel is allowed.

Students should also read the Calendar, [Section G](#), on Examinations.

8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

9. Writing Across The Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also [Section E.2](#) of the University Calendar.

10. Human Studies Statement:

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

12. Other Important Information For Students:

- a. **Mental Health** 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, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Center:** For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (syva@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>)
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also

been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples.**

- e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Teaching Professor of the Department of Geoscience, Jennifer Cuthbertson by email cuthberj@ucalgary.ca or phone 403-220-4709. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.

- f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.
- g. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: sciencerep@su.ucalgary.ca. [Student Ombudsman](#), Email: ombuds@ucalgary.ca.
- h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.
- i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

Course Outcomes:

- Students should be able to classify soils
- Students should be able to describe rock masses in an engineering geology context.
- Students should be able to apply the concepts of pore pressure and effective stress to engineering geology problems
- Students should be able to apply the Mohr circle and Mohr Coulomb failure envelope to stress and failure problems
- Students should be able to outline the steps in a site investigation
- Students should be able to select appropriate measurement and analytical technique for engineering geology studies.

Electronically Approved - Aug 25 2020 23:03

Department Approval

Electronically Approved - Aug 26 2020 14:34

Associate Dean's Approval for...

1. A non-registrar scheduled final examination.