



UNIVERSITY OF CALGARY

FACULTY OF SCIENCE
DEPARTMENT OF GEOSCIENCE
COURSE OUTLINE
FALL 2017

1. **Course:** GLGY 571, Engineering Geology

Lecture Sections:

L01: Tu,Th, 12:30-13:45, ST 143

B01: Mo 11:00-13:50, ES 149

B02: Mo 14:00-16:50, ES 149

B05: Fr 11:00-13:50, ES 149

For a listing of all lab sections corresponding with this course, please see the following link:

http://geoscience.ucalgary.ca/geoscience_info/courses/f16

Instructor: Dr. B. Karchewski, *Office:* ES 108, *Ph:* 403-220-6678, brandon.karchewski@ucalgary.ca,
Office Hours: Email for appointment, or drop-in when office door is open ☺

Teaching Assistants:

Jason Abboud, *Email:* jabboud@ucalgary.ca, *Lab Section:* B01, B05

Landon Woods, *Email:* landon.woods@ucalgary.ca, *Lab Section:* B02

Geoscience Department ES 118, 403-220-5184, geoscience.ucalgary.ca, geoscience@ucalgary.ca

2. **Prerequisites:** Geology 353 and 445. See also Geology [Course Descriptions](#) of the University Calendar.

3. **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.

4. **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. *Analyse* the stability of shallow foundations on soils and the stability of soil and rock slopes.
7. *Communicate* the results of geotechnical calculations and laboratory investigations to peers in the geoscience and geotechnical engineering community.

5. **Grading:** The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Assignments (4)	20%
Labs (2)	20%
Quizzes (6)	20%
Project/Presentation	10%
Final Exam	30%

In calculating the grade for the assignments component, the lowest grade will be dropped provided that all four assignments are submitted; assignments not submitted will receive a mark of zero (0). The lowest quiz mark will be dropped, including a maximum of one (1) absence from a quiz. Additional unexcused absences from quizzes will receive a mark of zero (0); additional quiz absences with sufficient notice and valid reason will have the weight re-distributed to the other quiz marks. The total percentage grade and will be rounded up to the nearest integer and converted to a letter grade according to the following table:

Letter Grade	GPV	Percent	Letter Grade	GPV	Percent
A+	4.0	95-100	C+	2.3	65-69
A	4.0	90-94	C	2.0	62-64
A-	3.7	85-89	C-	1.7	60-61
B+	3.3	80-84	D+	1.3	55-59
B	3.0	75-79	D	1.0	50-54
B-	2.7	70-74	F	0.0	<50

6. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar
7. **Course Materials:** *"Geological Engineering"*, by de Vallejo and Ferrer, CRC Press.
8. **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. You *may not* access the internet or 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 for computation is encouraged; a scientific calculator such as the Casio fx-991 or one with similar functionality is recommended. Students should also read the Calendar, [Section G](#), on Examinations.
9. **Writing across the curriculum statement:** The quality of the student's writing in homework, lab, reports and projects will be a factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

10. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **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
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> and Student Accessibility Services: <http://www.ucalgary.ca/access/>
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). As one consequence, 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 also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suvpaca@ucalgary.ca
 SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca
 and science3@su.ucalgary.ca;
 Student Ombuds Office: 403-220-6420 Email: ombuds@ucalgary.ca; <http://ucalgary.ca/provost/students/ombuds>
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference – please participate in USRI Surveys.

Department Approval: ORIGINAL SIGNED

Date: September 8, 2017

Associate Dean's Approval for
 Alternate final examination arrangements: ORIGINAL SIGNED

Date: September 11, 2017