Geotechnical Engineering 1
CVEN 3708, Fall 2016
lectures: MWF 12-12:50pm, ECCR 200, **labs**: M1-3pm, W9-11am, 1-3pm, ECCE 1B53
learn.colorado.edu

Instructor:
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office hours:
TuTh 12:30-2pm (ECOT 421)

Teaching Assistant:
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office hours:
M 3:30-5pm (ECCE 1B50)
F 10-11:30am (ECCE 1B52A)

Course Objective:
To introduce the terminology, basic principles, analytical methods, and laboratory techniques in soil mechanics for geotechnical and foundation engineering.

Prerequisite: CVEN 3161, Mechanics of Materials

Required text: J. Knappett, R.F. Craig, *Soil Mechanics*, 8th ed., CRC Press, 2012
Lab text: (on reserve) J.-P. Bardet, *Experimental Soil Mechanics*, Prentice Hall, 1997

Books on reserve at Engineering Library:
- J.-P. Bardet, *Experimental Soil Mechanics*, Prentice Hall, 1997.
- B.M. Das, *Principles of Geotechnical Engineering, 5th ed*., Brooks Cole/Thompson Learning, 2002.
- R.D. Holtz & W.D. Kovacs, *An Introduction to Geotechnical Engineering*, Prentice Hall, 1981.
- T.W. Lambe & R.V. Whitman, *Soil Mechanics*, Wiley, 1969.
- T.W. Lambe & R.V. Whitman, *Soil Mechanics, SI version*, Wiley, 1979.

Course Outline (Craig)
Characteristics of soils and Soil classifications (Ch1)
Seepage (Ch2)
Stresses and elastic displacements (Sects 5.1, 5.2, 8.5, 8.6)
Effective stress principle (Ch3)
Consolidation (Ch4)

Grading:

Problem Sets	15%
Lab reports and Lab attendance	20%
Midterm Exam 1 (in-class, TBD)	15%
Midterm Exam 2 (in-class, TBD)	15%
Final exam (in-class, TBD)	35%

Problem sets and Exams:
Problem sets will be given approximately every other week and will be collected in-class and graded. You may work together on the problem sets, but you are encouraged to attempt the problems by yourself before consulting with other students. This is the best way to prepare for the in-class Midterm Exams and Final Exam. There will be approximately 6 problem sets. You are allowed one late problem set, turning in the late problem set two class periods after it is due. The Exams are in-class, and open book, open notes. No formula sheets provided.

Labs:
The labs are required for the course and will help you in understanding the principles presented in lecture. **You are required to participate in the labs. If you miss a lab, you will receive a grade of 0 points on the lab report**. Read a description of the lab before your lab session (Craig, Bardet, and handout). You will work together in groups of about 5 students in lab, but you will hand in one report per student. Reports should discuss the relation between theory presented in class (and covered in problem sets) and measurements made in the lab. A required general format for reports will be provided in the handout, and reports are due typically one week after the lab was conducted (unless you share data from all lab sessions). Some lab sessions will be split into two sub-sessions depending on the number of students per lab, and you will be emailed as to which sub-session you are assigned (e.g., for a 2hr lab session, you will be assigned to one of the two 1hr sub-sessions, A or B). **There is no class on the Friday that lab is held.**

Tentative lab schedule: approximately every week at the beginning; readings in Bardet, and handout
Lab 1 (particle-size analysis: mechanical method, 1.1-1.2) M 8/29, W 8/31
Lab 2 (specific gravity, 3.3) M 9/12, W 9/14
Lab 3 (particle-size analysis: hydrometer method, 1.3-1.7) M 9/19, W 9/21
Lab 4 (liquid and plastic limits of soils, 2.1-2.9) M 9/26, W 9/28
Lab 5 (moisture-unit-weight relationship: compaction test, 3.1-3.5) M 10/3, W 10/5
Lab 6 (consolidation test, 6.1-6.2) M 11/7, W 11/9 (tentative, may need to be scheduled later)

Conduct in lecture:
Please conduct yourself in a respectful and professional manner in class. **Attendance is not required for lecture, but it is for labs**. *Please do not talk in class out of turn. If you are caught talking out of turn in class more than once, and you are disrupting the class, you will receive a point deduction on your problem set grade, TBD by Dr. Regueiro.* Please refer to the campus webpage:
http://www.colorado.edu/policies/student-classroom-and-course-related-behavior

Honor Code:
Violation of the honor code will not be tolerated. Please refer to the following webpage for details:
http://www.colorado.edu/policies/student-honor-code-policy
If you are found to violate the honor code, you will receive an "F" for the course, regardless of the degree of academic dishonestly.

Special considerations:
•If you have a disability and require special accommodations, please provide Dr. Regueiro with a letter from Disability Services outlining your needs. Refer to webpage http://disabilityservices.colorado.edu/.
•If you have a conflict as a result of religious observances, please notify Dr. Regueiro at least 2 weeks in advance of the exam or assignment due date. http://www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams

Bechtel Lab: If you do not have Buff OneCard swipe access, go to ECOT 441 to sign up.