Geotechnical Engineering 2
CVEN 3718, Fall 2015

lectures: MWF 11-11:50, ECCR 155, labs: F 2-4, 4-6, ECCE 1B53
learn.colorado.edu

Instructor:
Assoc. Prof. Richard Regueiro
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Teaching Assistant:
Mr. Thomas Borden
ECCE 1B53, or TBD
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office hours (ECOT 421): MF 12-1:30pm

Course Objective:
To learn the fundamental principles of soil mechanics pertaining to shear strength and failure analysis, and how to apply these principles to current design procedures for geotechnical structures, such as retaining walls, foundations, and slopes.

Prerequisites:
CVEN 3708, Geotechnical Engineering 1; CVEN 3161, Mechanics of Materials

Lab text: (on reserve) J.-P. Bardet, Experimental Soil Mechanics, Prentice Hall, 1997

Books on reserve at Engineering Library:

Course Outline
Stress analysis in soils (Coduto Ch10, Bardet Ch5, brief review of CVEN3161)
Shear strength (Coduto Ch13, Bardet Ch5,7)
Lateral earth pressures and retaining structures (Coduto Ch16)
Bearing capacity and foundations (Coduto Ch17)
Stability of slopes (Coduto Ch14)

CVEN 3718 Grading:
Problem Sets 20%
Lab Reports 20%
Midterm Exam 1 (in-class, TBD) 15%
Midterm Exam 2 (in-class, TBD) 15%
Final Exam (in-class, Th, Dec17, 4:30-7pm) 30%

Problem Sets:
There are approximately 7 problem sets. You can work together but must turn in your own solutions. You are allowed one late problem set, turning in the late problem set one class period after it is due.
Labs:
The labs are required for the course and will help 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 (Coduto, Bardet, and handout). You will work in groups of about 5, with one report per group. Reports should discuss 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 held (unless you share data from all lab sessions). Most likely 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:
Lab 1 (shear strength of cohesionless soils: direct shear) F 9/18  
Lab 2 (shear strength of cohesionless soils: CD triaxial) F 9/25  
Lab 3 (shear strength of cohesive soils: Vane test; UC) F 10/16  
Lab 4 (centrifuge testing of retaining wall failure) F 10/30  
Lab 5 (Bechtel lab: SLOPE/W for slope stability analysis) F 11/6  
Lab 6 (centrifuge testing of slope stability) F 11/13

Midterm Exams:
The two in-class midterm exams will follow closely the problem sets, and thus will be closed notes and closed book. Formula sheets will be provided. The purpose of the midterm exams is to check that you understand the problem sets.

Final Exam:
The in-class final exam will test your knowledge of the concepts learned in class, through problem sets, and in the labs. Thus, it will be open book and open notes.

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](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](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 dishonesty.

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/](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](http://www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams)

Bechtel Lab: Please email the last 7 digits of your BuffOne ID to susan.rundell@colorado.edu for you to be able to use the Bechtel Lab if you don’t already have card swipe access.