SACRAMENTO STATE
Construction Management

CM 135

Course Syllabus
Spring 2009

Instructor: Dr. Ali Porbaha

Lecture Schedule: TR 8:00 – 8:50 A.M.
Lab 1: T 9:00 – 11:50 A.M. SCL 1118A, D, E
Lab 2: R 9:00 – 11:50 A.M. SCL 1118A, D, E
Lecture Location BRH 104

Phone Number: 278-6120
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Office hours and location: By appointment

Department of Civil Engineering
CALIFORNIA STATE UNIVERSITY, SACRAMENTO

Course Syllabus

Soils & Foundations_CM135

Learning Objectives

- To acquire a general basic knowledge of the principles of geotechnical engineering (i.e., soil mechanics and foundation engineering).
- To apply soil mechanics concepts in solving construction related engineering problems.

Schedule

Lecture: TR 8:00-8:50 A.M. (BRH_104)
Laboratory: T or R 9:00-11:50 A.M. (Santa Clara Hall: SCL-1118A,D,E)

Textbooks

- Liu, C., Evett, J.B. "Soils and Foundations", published by Prentice Hall.
- ~~Das, B.M. "Soil Mechanics Laboratory Manual", published by Oxford University Press.~~

Instructor

Dr. ALI (Full Name: Ali Porbaha)
Office: 4032 Riverside building, Phone: (916)-278-6120
E-mail for short messages:porbaha@ecs.csus.edu
Office hours: To be available second week of classes

Course Assessment

Course assessment is based on your effort as specified below:

Assignments (Homework, Laboratory Reports) and active class participation	25%	Homework is due one week after a chapter is complete (weekly); and lab report is due one week after the experiment.
Exam I	20%	Tuesday, March 10
Exam II	25%	Tuesday, April 14
Exam III	30%	Tuesday, May 12

Lecture Topics

Topic	Readings	Minimum Assignment
Introduction to Geotechnical Engineering		*
Engineering Properties of Soils	Chapter 2	2 (2, 4, 7, 17, 19)
Soil Compaction	Chapter 4	4 (2, 3, 4, 6, 7)
Water in Soils	Chapter 5	5 (1, 7, 8, 12, 13)
Stresses in Soils	Chapter 6	6 (2, 5, 7, 10, 12)
Soil Compressibility and Settlement	Chapter 7	7 (2, 5, 9, 11, 12)
Shear Strength of Soils	Chapter 8	8 (2, 3, 4, 7, 11)
Shallow Foundations	Chapter 9	9 (3, 4, 8, 9, 11)
Pile Foundations	Chapter 10	10 (3, 4, 5, 6, 8)
Lateral Earth Pressures	Chapter 12, 13	12 (1, 3, 4, 9, 12)
Subsurface Investigation	Handout	
Special Lectures	Handout	

*Assignment 1: Look at the soil reports of several construction projects (or use the internet) to find out what geotechnical information is available in those reports. Write a one page summary. (Due next lecture)

WebCT

The online component of this course is being delivered via the Web-based course management system, WebCT. The course environment is a closed, secure environment. The class is only accessible to registered students, the instructor, and the WebCT administrator. To access WebCT: http://online.csus.edu.

Tentative Laboratory experiments

- Visual Soil Classification
- Grain Size Analysis
- Atterberg Limits Test
- Compaction Test
- Field Density Test
- Geosynthetics (Demonstration)
- Consolidation Test
- Direct Shear Test
- Unconfined Compression Test
- Construction Challenge

Laboratory Report Format

The lab reports, preferably in MS_Word, are to be submitted electronically to WebCT one week after the experiment. If you use MS_Excel to perform some analysis or to plot figures, you need to import (or cut and paste) from Excel into MS-Word. The main report and all the attachments should be submitted in one file. The file name will be "**Lab#_Group name**" (for Example: Lab5_Dirt Dragon). All experiments must be completed. The recommended report format is as follows:

Cover page
(Including: course name, experiment name, team name, lab partners, date performed the test, group picture), add page number as well.

1. **Introduction**
   - 1.1. Objective(s)
   - 1.2. Equipment
   - 1.3. Description of soil(s)
   - 1.4. Testing Procedure (use pictures, step by step, do not copy from the laboratory book)
2. **Results**
   - 2.1. Test results
   - 2.2. Discussion of results (is the result acceptable?, compare your results with the published information, if any)
   - 2.3. Sources of error
   - 2.4. Sample calculations (if applicable)
3. **Conclusions**
   - 3.1. Concluding remarks (A summary of objectives and big picture results)
   - 3.2. Engineering Applications

Reference(s)
Attachments (if applicable)

Exams

The exams may include materials from both the lectures and the laboratory sessions. The exams are closed book. However, you are allowed to have one formula sheet (a letter-size paper containing any equations on both sides).

Academic Integrity

Please make yourself familiar with academic integrity guidelines published by the University (http://www.csus.edu/umanual/student/UMA00150.htm). Several guidelines are also available at: (http://www.csus.edu/schedule/Fall2006Spring2007/acadishnsty.stm).

Students with Disabilities

If you have a disability and require accommodations, you need to provide disability documentation to the Office of Services to Students with Disabilities (SSWD), Lassen Hall 1008, (916) 278-6955. Please discuss your accommodation needs with the instructor during the first week of classes.