Spring 2007

End-of-Course Survey

CE 467

Professor Amy Rechenmacher

Geotechnical Engineering

COURSE OBJECTIVES AND OUTCOMES		How well did you learn? Not at all → Very Well 1 2 3 4 5
Goal. This course is an introduction to soil mechanics, foundation engineering and design, soil testing, soil classification, seepage, stress-strain behavior, shear strength, consolidation, retaining structures, laboratory data processing, foundations, slope stability, laboratory data processing, use of experimental data in geotechnical engineering calculations, and report writing.		PLEASE CIRCLE YOUR RATINGS ↓ BELOW ↓
Objective. Students will understand the geological and physical origins of soils, and to describe soils in terms of their grain distribution, plasticity, and weight-volume relationships. **Outcome.** Students will be able to		
1	Understand the relations between soils, elements, minerals and rocks	1 2 3 4 5
2	Characterize soils by grain size analysis and plasticity and classify soils for engineering	1 2 3 4 5
3	Characterize the states of soils using weight- volume relationships	1 2 3 4 5
4	Understand soil compaction	1 2 3 4 5
Objective. To analyze the flow of water through soils using different approaches **Outcome:** The student will able to		
5	Analyze a seepage problem using flow nets obtained by hand sketching, electrical analogy, and	1 2 3 4 5
6	Define pros and cons of different methods of analysis	1 2 3 4 5
7	Calculate seepage forces on hydraulic structures	1 2 3 4 5
8	Calculate water pressure within earth dams	1 2 3 4 5
Objective. To calculate stress states in soil deposits and below foundations, and resulting **Outcome:** The student will able to		
9	Use Mohr circle and pole	1 2 3 4 5
10	Calculate stress increase due to foundations	1 2 3 4 5
11	Calculate amplitude and rate of settlement	1 2 3 4 5
12	Determine soil properties from laboratory test for calculation of settlement	1 2 3 4 5
Objective. To analyze stability of retaining structures **Outcome:** The student will able to		
13	Measure shear strength properties from laboratory tests	1 2 3 4 5
14	Calculate lateral stresses on retaining walls	1 2 3 4 5
15	Design gravity walls and sheet pile walls	1 2 3 4 5
Objective. To use MSExcel and MSWord for data processing and engineering reports **Outcome:** The student will able to		
16	Write some Visual Basic subroutine to customize spreadsheets	1 2 3 4 5
17	Perform engineering calculations with spreadsheet	1 2 3 4 5
18	Write organized reports including experimental results	1 2 3 4 5
19	Use experimental results in engineering calculations	1 2 3 4 5
20	Present results as powerpoint presentation	1 2 3 4 5

Objective. To experiment in the lab with materials and processes, analyze and report on the data **Outcome:** The student will able to perform the following lab functions		
21	Data processing and report writing	1 2 3 4 5
22	Grain-size analysis	1 2 3 4 5
23	Soil compaction	1 2 3 4 5
24	Flow of water through soils	1 2 3 4 5
25	Shear strength	1 2 3 4 5
26	Compressibility of soils	1 2 3 4 5
27	Shear strength	1 2 3 4 5
RELATIONSHIP OF CIVIL ENGINEERING PROGRAM COURSE OBJECTIVES TO OUTCOMES		
Objective. The Civil Engineering program is designed to teach beyond the technical content of the curriculum and prepare the students to utilize what they learn in a professional setting. Engineering projects and research activities enlist skills and demonstrate ability to understand the subject matter and communicate in a proficient manner. This course contributes to the overall program goals in the following ways. **Outcome.** Engineering programs must demonstrate that their students attain		
(a)	an ability to apply knowledge of mathematics, science, and engineering	1 2 3 4 5
(d)	an ability to function on multi-disciplinary teams	1 2 3 4 5
(e)	an ability to identify, formulate, and solve engineering problems	1 2 3 4 5
(g)	an ability to communicate effectively	1 2 3 4 5
(i)	a recognition of the need for, and an ability to engage in life-long learning	1 2 3 4 5