

Soil Mechanics I

Course Description Form

1. Course Name:					
Soil Mechanics I					
2. Course Code:					
CIV31201					
3. Semester / Year:					
First semester / Third year					
4. Description Preparation Date:					
1 st September 2005					
5. Available Attendance Forms:					
Weekly (Lect :90 hr and Lab: 30 hr)					
6. Number of Credit Hours (Total) / Number of Units (Total)					
Lecture :90 hours Lab: 30 hours Total: 90 hours ECTS: 4					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Lubna Abdulrahman Khder Email: lubna.abddulrahman@muc.edu.iq					
8. Course Objectives					
Course Objectives	1. The student acquires knowledge and special skills to be knowledge on soil from engineering side of view. 2. To be able to analyze the problems dealing with soil mechanics and its engineering properties. 3. To find the results using the relevant theories, hypotheses and laws together with the related laboratory and field tests.				
9. Teaching and Learning Strategies					
Strategy	The main strategy that will be adopted in delivering soil mechanics I is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.				
Course Structure					
We ek	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1.	Th.:3 Pr.: 2	Introduction to Soil Mechanics: Students will understand the definition of soil and the scope of soil mechanics.	Soil Formation	Lect. & Lab.	Homework
2.	Th.:3 Pr.: 2	Water Content Determination: Students will determine soil water content using standard laboratory methods.	Soil Formation	Lect. & Lab.	Classwork
3.	Th.:3 Pr.: 2	Basic Soil Characteristics: Students will identify basic soil characteristics and their engineering relevance.	Soil Classification s	Lect. & Lab.	Homework
4.	Th.:3 Pr.: 2	Sieve Analysis: Students will perform sieve analysis to classify coarse-grained soils.	Soil Classification s	Lect. & Lab.	Quiz
5.	Th.:3 Pr.: 2	Hydrometer Analysis: Students will conduct hydrometer analysis to classify fine-grained soils.	Soil Compaction	Lect. & Lab.	Classwork
6.	Th.:3 Pr.: 2	Phase Relationships: Students will calculate soil phase relationships and interpret their significance.	Soil Compaction	Lect. & Lab.	Homework
7.	Th.:3 Pr.: 2	Atterberg Limits: Students will determine Atterberg limits to assess soil consistency and plasticity.	Permeability	Lect. & Lab.	Classwork
8.	Th.:3 Pr.: 2	Laboratory Compaction Test: Students will perform laboratory compaction tests to obtain OMC and MDD. Students will measure in-situ soil density and evaluate field compaction quality.	Permeability	Lect. & Lab.	Quiz
9.	Th.:3 Pr.: 2	Mid-exam			Exam
10.	Th.:3 Pr.: 2	Laboratory Permeability Test: Students will determine soil permeability using laboratory testing procedures.	Permeability	Lect. & Lab.	Classwork
11.	Th.:3 Pr.: 2	Field Permeability Measurement: Students will evaluate soil permeability using field measurement methods.	Seepage	Lect. & Lab.	Quiz
12.	Th.:3 Pr.: 2	Specific Gravity Determination: Students will compute specific gravity and apply it within soil phase relations.	Seepage	Lect. & Lab.	Exam
13.	Th.:3 Pr.: 2	Seepage Theory and Flow Nets: Students will analyze seepage through soils and construct flow nets.	Effective stress	Lect. & Lab.	Homework
14.	Th.:3 Pr.: 2	Effective Stress Analysis: Students will calculate effective stress and assess how seepage influences it.	Effective stress	Lect. & Lab.	Classwork
15.	Th.:3 Pr.: 2	Preparation for the final examination		-	

16. Course Evaluation

The grade distribution is as follows:

Assessment: Formative 40 marks, monthly exam 10 marks

Final exam: Theory 50 marks

17. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of geotechnical engineering Das, Braja M
Main references (sources)	Soil Mechanics T. William Lambe, Robert V. Whitman

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	