Salahaddin University - Erbil
College of engineering - Civil Department

Module Name	Soil Mechanics			Code	
Course Status	Core	Duration:	15 week – one semester	Credit point	5
Pre-requisites			Total Work Load 135 hr	Class Attendance 60 hr	Self-Studies 75 hr

Course Description

Soil mechanics is a branch of Engineering Mechanics that describes the behavior of soils. In soil mechanics, the various properties of the soils are studied. These properties will be used for various engineering construction works. There are various reasons (listed below) that as a civil Engineer one must study this rather new branch of the Engineering science.

Foundations: All Civil Engineering structures ultimately rest on soils. They transfer their whole load to the soils; therefore, properties of the soils have to be determined accordingly.

Earth Dams: There are so many earth dams constructed to retain water. Soils to be used for construction of these earth dams must be suitable enough to be used in terms of various properties such as permeability, strength and density.

Retaining and underground structures: Retaining structures such as retaining walls, are constructed to retain lateral pressures from soils, water, surcharge etc.

It is important for Civil Engineers to have very good knowledge in terms of Soil Mechanics and Geotechnical Engineering, in order to have opportunity to get good jobs with local/international companies.

Course Objectives

General Objectives are:

1- To learn students what are principles of soil Mechanics (Weathering, clay minerals, stress within soils, etc…) and how to find them.
2- How to apply these principles in the real life (Civil Engineering projects).

Some specific objectives are:

1- Teaching students how to classify soils according to popular standard systems such as Unified soil classification system.
2- Teaching students how to determine amount of rate of flow through and underneath earth structures (such as earth dam) and pore water pressure at any point of them.
3- Explaining the nature of soil problems faces Geotechnical and Civil Engineers.

Learning Outcome

In this course students learn about the core concepts mentioned in the items above. They will be capable of recognizing types of soils and how these soils will be used in different kind of engineering projects such as highway, embankments and retaining walls.

Literature & text Books

Principals of Geotechnical Engineering, 2014. Braja M. Das.

Type of Teaching

Theory Lectures	Tutorial	Practical
3 hr	1 hr	1 hr

Evaluation Profile

Students are required to do first midterm exam on 8 week, class room activities, quizzes, home works and final exam on week 15th. So that the final grade will be based upon the following criteria:

Course period efforts (out of 50%)	Midterm Exam (90 min written exam at week 8)	20 %
	Short exams (Quiz) at least 2 during the course period (one of them must before week 8)	10 %
	assignments and home works at least 2 during the course period	3 %
	Class Room Activities, Reports and 3D models	7 %
	Laboratory tests and reports	10%
Course period efforts (out of	Written exam (120 min written exam week 15)	50 %
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