

University of Salahaddin – College of engineering – Civil engineering Department

Module Name	Foundation Engineering			Course Status	Core
Frequency	Yearly in fall semester	Code	1134	Credit point	5
Duration:	15 week – 1 semester			Module Language	English
Pre-requisites	Soil Mechanics			Required Level	
Course Description	<p>The term "foundation engineering" is used to include the design of foundations for buildings and other structures and also for such non-foundation problems as designs of retaining walls, bulkheads, cofferdams, tunnels as well as the design of natural slopes, dewatering of soils, and improvement of soils mechanically and chemically. The foundation Engineer must possess a working knowledge in each of the following areas: structural engineering, geotechnical engineering and construction engineering. The importance of the subject appears from the just mentioned paragraph, the Repair of failed foundation is not an easy matter and it involves complicated engineering techniques with high cost in most of the cases. Special care is required in cases of weak compressible soils and water table variations. The subject will give a good knowledge to compete civil engineering branches.</p>				
Course Objectives	<p>To learn about types and purposes of different foundation systems and structures. To provide students with exposure to the systematic methods for designing foundations. To discuss and evaluate the feasibility of foundation solutions to different types of soil conditions considering the time effect on soil behavior. To build the necessary theoretical background for design and construction of foundation systems. The importance of the subject appears from the just mentioned paragraph, the Repair of failed foundation is not an easy matter and it involves complicated engineering techniques with high cost in most of the cases. Special care is required in cases of weak compressible soils and water table variations.</p>				
Learning Outcome	<p>The student will be able to deal with different problems related to design and construction of foundations and stability of retaining structures following ACI code . As the student will be learned by site investigation steps he will be able to supervise the site investigation projects. The student will be able to calculate bearing capacity of soils. He will be able to calculate carrying capacity of single and pile groups with their settlement calculations.</p>				
Literature & text Books	<p>Das B.M. 2018 “Principles of Foundation Engineering” Thomson 10th edition -Bowles J.E. 1997“Foundation Analysis and Design” Mc Graw Hill international 6th Edition</p>				
Type of Teaching	Theory Lectures	Tutorial	Practical		
	3 hr	1 hr	0 hr		
Evaluation Profile	<p>Students are required to 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:</p>				
	Midterm Exam (90 min written exam at week 8)				20 %
	Class Room Activities, quizzes, assignments (during the course period)				20 %
	Final Course Exam	Written exam (120 min written exam week 15)			60 %
	-----			%	
Work load:	Total Work Load 135 hr		Class Attendance 60 hr	Self Studies 75 hr	