



The Hashemite University
Faculty of Engineering
Civil Engineering Program
Course Syllabus



Course Title:	Foundation Engineering	Course Number:	110401435
Department:	Civil Engineering	Designation:	Compulsory
Prerequisite(s):	110401336		
Instructor:	Samer Rababah	Instructor's Office:	E 3008
Instructor's e-mail:	srababah@hu.edu.jo		
Office Hours:	S,T,Th (11-12 am), M,W (8:30-9:30) or by appointment		
Time:	S,T,Th (9-10 am), M,W (9:30-11:00)	Class Room:	E2001, E2025

Course description: Site investigation, bearing capacity of shallow foundation, distribution of stresses in soils, settlement of shallow foundation, factors to be considered in foundation design, introduction to deep foundation, lateral earth pressure and retaining walls, sheet pile walls, braced excavations.

Textbook(s): Principles of Foundation Engineering, Braja M. Das, 8th edition.
 Foundation Analysis and Design”, Joseph E. Bowles, , 5th Edition, 2001,

Other required material: None

Course objectives: The course objectives involve an introduction to the field of foundation engineering by providing:

1. Understanding of the need and procedures for subsurface investigations and subsurface condition evaluation
2. Understanding of foundation behavior and performance under service conditions
3. Design of Shallow Foundations; Bearing Capacity; Footing Design; Settlement
4. Develop a basic understanding of Lateral Earth Pressures; Retaining ; and Sheet Pile Walls
5. Develop a basic understanding of Deep Foundations, Piles; and Drill Shafts

Topics covered: **Major Topics Covered:**

Topics	No. of Weeks	Contact hours*
Introduction	1	3
Geology Review; Field Investigations; Subsurface Exploration; Sampling; In-Situ Testing	2	6
Shallow Foundations; Bearing Capacity	3	3
Shallow Foundations; Settlement	1	9
Factors Influencing Footing Design; Mat Foundations	1	3
Deep Foundations, Piles;Piles-Load Behavior; Static Capacity; Uplift; Piles-Dynamic Capacity; Group Behavior	2	6
Deep Foundations, Drill Shafts, Load Behavior, Capacity	2	6
Lateral Earth Pressures; Retaining Walls	2	6
Lateral Earth Pressures; Sheet Pile Walls; Braced Excavations	1	3
Total	15	45

*Contact hours include lectures, quizzes and exams

Class/laboratory schedule: 3 (2)class sessions each week; 50(75) minutes each

Grading Plan:

First Exam	(30 Points) (08/03 /2018)
Second Exam	(30 Points) (18/04/2018)
Final Exam	(40 Points) Will be announced by the registrar
Others	

General Notes: Students are expected to attend **EVERY CLASS SESSION** and they are responsible for all material, announcements, schedule changes, etc., discussed in class. The university



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policy regarding the attendance will be strictly adhered to.

Course contribution:

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
General Engineering Student Outcomes		
(a)	an ability to apply knowledge of mathematics, science, and engineering	L (15)
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	H(50)
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	M(35)
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	
H=High, M= Medium, L=Low		

Prepared by: Samer Rababah

Date: 15/1/2018