



**The Hashemite University  
Faculty of Engineering  
Civil Engineering Program  
Course Syllabus**



<b>Course Title:</b>	Geotechnical Eng. 3 (3,0, 0)	<b>Course Number:</b> 110401336
<b>Designation:</b>	Compulsory	<b>Prerequisite(s):</b> 110401212
<b>Instructor:</b>	Dr. Omar Hattamleh	<b>Instructor's e-mail:</b> hattam@hu.edu.o
<b>Office Hours:</b>	9:00 – 10:00: Sun. & Tue., 11:00 – 12:30: Mon. & Wed.	

**Course Description (catalog):** Index and classification of soils, water flow in soils (one and two dimensional water flow), soil stresses, soil compaction, distribution of stresses in soil due to external loads, consolidation and consolidation settlement, shear strength of soils, slope stability.

**Textbook(s) and/or Other Supplementary Materials:**

Braja M. Das and Khaled, Principles of Geo-technical Engineering, 8th Edition, SI Edition, 2014, Cengage Learning, Stamford, CT 06902, USA.

**References:**

1. .F. Craig, Soil Mechanics, Spon Press, 2004
2. Budhu M. (2007) "Soil Mechanics and Foundations" Wiley, New York
3. Holtz, R.D. and Kovacs, W.D. (1981). An Introduction to Geotechnical Engineering, Prentice Hall. (Chapter 1 and 2)9.

**Major Topics Covered:**

Topics	No. of Weeks	Contact hours*
Introduction to Geotechnical Engineering	1	3
Formation of Soils and Mineralogy of Soil Solids	1	3
Index Properties and Classification of Soils	2	6
Soil Compaction	1	3
Stress Distribution in Soils Due to External Loading	1	3
Soil Consolidation, Consolidation Settlement, and Rate of Consolidation	3	18
Shear Strength of Soils	3	18
Stability of Slopes	3	9
<b>Total</b>	<b>15</b>	<b>45</b>

\*Contact hours include lectures, quizzes and exams

**Specific Outcomes of Instruction (Course Learning Outcomes):**

**After completing the course, the student will be able to:**

5. Understand the basics properties of soil, and soil formation. (a)
6. Use standards methods to classify soils. (a, e)
7. Determine compaction, permeability of soil. (a)
8. Determine total and effective stresses and pore water pressures and determine how surface stresses are distributed within a soil mass. (a, e)
9. Draw flow net, stability of earth dams due to seepage force (a, e)
10. Recognize soil consolidation and Determine soil settlement due to consolidation(a, e)
11. Recognize soil shear strength and evaluate slope stability (a, e)

**Student Outcomes (SO) Addressed by the Course:**

#	Outcome Description	Contribution
<b>General Engineering Student Outcomes</b>		
(a)	an ability to apply knowledge of mathematics, science, and engineering	M (40)
(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	



**The Hashemite University  
Faculty of Engineering  
Civil Engineering Program  
Course Syllabus**



(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	H(60)
(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.	
<b>H=High, M= Medium, L=Low</b>		

<b>Grading Plan:</b>	1st Exam	30 Points	<b>Mon. 16/11/2017 [ 10:00 ~ 11:00]</b>
	2nd Exam	30 Points	<b>Th. 17/12/2017 [ 10:00 ~ 11:15]</b>
	HWs. & Qs	00 points	
	Final exam	40 points	

**General Notes:** Beware of Plagiarism: copying and handing in for credit someone else's work  
Any plagiarism case will result in an automatic 'F' for the course

**Prepared by:** *Dr. Omar Hattamleh*

**Date:** 18<sup>th</sup> Sep. 2017