DEPARTMENT OF CIVIL ENGINEERING
COURSE SYLLABUS

COURSE TITLE	***ENGLISH CODE/NO***	***ARABIC CODE/NO.***	***CREDITS***			
			Th.	***Pr.***	***Tr.***	***Total***
Geotechnical Engineering	0901231		1	0	0	
Pre-requisites:	Strength of Materials 0901242					
Course Role in Curriculum	*Required or Elective:*		Required			
	A pre-requisite for:					
Catalogue Description: Phase relationships. Physical properties of soil. Soil classification. Permeability and seepage. Shear strength. Compressibility, consolidation and settlement.						

Instructor or course coordinator: Dr. Wassel AL Bodour

***Textbooks*:**

"Soil Mechanics Laboratory Manual", Braja M. Das,8th Edition or latest, SI Edition, , 2014, Cengage Learning ,Stamford, CT 06902, USA

Supplemental Materials: Course notes, first day materials, Handouts, assignments.

Course Learning Outcomes:	
By the completion of the course the student should be able to:	
1.	To introduce the student to the principal laboratory testing methods for identifying the physical and engineering properties of soils
2.	Student will be able to classify soils
3.	Student will be able to comprehend soil consistency
4.	Student will be able to determine soil permeability
5.	Student will be able to apply the time-dependent deformation concept
5.	Interpretation of soil shear strength

Topics to be Covered:		***Duration in Weeks***
1.	• Water content determination • Specific Gravity of Solids	1
2.	• Particle Size Analysis/ Mechanical Method	1
3.	• Particle Size Analysis/ Hydrometer	1
4.	• Atterberg Limits	1
5.	• Soil Compaction	1
5.	• Determination of in-place soil density	1
6	• Coefficient of permeability	1
7.	• Consolidation test	2
8.	• Direct Shear Test	3
9.	• Unconfined compression test	3
	Triaxial Test	

Key Student Outcomes

(a)	an ability to apply knowledge of mathematics, science, and engineering	
(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	
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	
(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.	

Key Student Outcomes assessed in the course: (a), (b), (d), (g), (i), and (k)

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Last updated: Oct., 2017