Republic of Iraq

The Ministry Of Higher Education

& Scientific Research

بسم الله الرحمن الرحيم

University: Diyala
College: Engineering
Department: Civil
Stage: 3
Lecturer name: Jasim M Abbas
Qualification: Assist Prof
Place of work: Dep of Civil Eng

Flow up of implementation celli pass play

Course Instructor	Jasim M Abbas				
E-mail	jasimalshamary@yahoo.com				
Title	Assist Prof Dr.				
Course Coordinator	5 Hrs / week				
Course Objective	To increase the student knowledge regarding the expected problems that maybe occurred in subsoil system, in addition study the effect of these problems on the projects during and after construction				
Course Description	This topic includes some important fundamental of soil mechanics and detailed laboratory tests in addition well known soil classification system. The topic is also included the hydraulic properties of soils and its effect on flow under and through earth structures. In addition soil stresses and soil strength, finally the topic includes soil and foundation settlement				
Textbook	Principles of Geotechnical Engineering. BRAJA M. DAS. 8th Edition. Cengage Learning. 2014 Craig's Soil Mechanics. R.F. Craig. Seventh edition. Spon Press. 2004 Soil Mechanics and Foundations. Muni Budhu. 3rd edition. WILEY. 2011 Soil Mechanics. T. William Lambe. John Wiley & Sons. Reprinted 2010				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	(40%)	(10%)	(10%)	-	(60%)
General Notes	None				

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Course Weekly Outline

Week	21/10/2014	Topes Covered	Lab. Experiment Assignments	Notes
1	28/10/2014	**Basic characteristic of soils**	**Soil mechanics : definitions ,laboratory procedures and report preparation**	
2	4/11/2014	**Introduction – Nature of soils and soil composition – Roles of pore phases**	**Water content determination**	
3	11/11/2014	**The hydrodynamic analogy – Phase relationships – mechanical and physical properties of soils**	**Unit weight of cohesive soil**	
4	18/11/2014	**soil description and soil classification**	**Liquid and plastic limits of a soil**	
5	25/11/2014	**Stresses within a soil mass**	**Shrinkage limit**	
6	2/12/2014	**Concept of stress for a particulate system – Geostatic stresses – stresses induced by applied loads –**	**Shrinkage limit**	
7	9/12/2014	**The Mohr-circle – Stress path and the p-q diagram**	**Grain size- analysis mechanical method**	
8	16/12/2014	**The effective stress concept and pore-water-pressure - capillarity theory**	**Grain size- analysis mechanical method**	
9	23/12/2014	**Hydraulic properties of soils**	**Grain size- analysis mechanical method**	
10	30/12/2014	**1-D fluid flow – Darcy theory for permeability –**	**Grain size analysis – hydrometer method**	
11	6/1/2015	**The piezometer**	**Grain size analysis – hydrometer method**	
12	21/10/2014	**Calculation of pressure –**	**Specific gravity of**	

		Total elevation heads	**soil solids**	
13	28/10/2014	**Effective stress in soil with fluid flow**	**Unit weight –water content relation (compaction)**	
14	4/11/2014	**Theory of seepage force**	**Determination of In- place soil density**	
15	11/11/2014	**2-D fluid flow**	**Determination of In- place soil density**	
16	18/11/2014	**Flow net for 2-Dflow.**	**Determination of In- place soil density**	
Half – year break				
17	24/2/2015	**The consolidation theory**	**Consolidation test**	
18	٣/٣/2015	**Introduction to consolidation concept – The odometer test – Compressibility characteristics**	**Consolidation test**	
19	١٠/٣/2015	**The e-log$_{10}$ б$_v$ carve and casagrande preconsoldation pressure**	**Unconfined compression testing**	
20	١٧/٣/2015	**Teraghi theory for 1-D consolidation – Degree of consolidation – Consolidation settlement and secondary compression**	**Unconfined compression testing**	
21	٢٤/٣/2015	**coefficient of consolidation by Taylo and Casagrande method -application**	**Triaxial test**	
22	٣١/٣/2015	**Shear strength of soils**	**Triaxial test**	
23	٧/٤/2015	**Shear frailer of soil ,mohr coulomb failure law ,shear test /the direct shear**	**Triaxial test**	
24	١٤/٤/2015	**triaxial ,unconfined compression**	**Coefficient of permeability (falling head method)**	
25	٢١/٤/2015	**vane shear ,the cd,cu ,and v tests**	**Coefficient of permeability (falling head method)**	
26	٢٨/٤/2015	**pore –water-pressure parameters –applications**	**Coefficient of permeability (constant head method)**	
27	٥/٥/2015	**Improvement of of soils**	**Coefficient of permeability (constant head method)**	
28	١٢/٥/2015	**Description of problem**	**Coefficient of permeability (constant head method)**	

29	١٩/٥/2015	**field compaction ,compaction tests**	**Direct shear test**	
30	٢٦/٥/2015	**effect of compaction on soil behavior**	**Direct shear test**	
31	٢/٦/2015	**Computer application**	**Direct shear test**	

INSTRUCTOR Signature: **Dean Signature:**