FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

Faculty of Engineering & Technology

Foundations for Architects

Information :

Course Code :	SCM 442	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Department of Architectural Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Ahmed Mohamed Abdel Moniem Mohamed Soliman	

Area Of Study :

The Main Goals of this course are:
To enhance the students' knowledge about:
a. The nature of ground soil to be used as a founded material for structures.
b. Applications of laws of mechanics and hydraulics to soil engineering problems.
To make the students able to:
a. Estimate the bearing capacity of soil based on its shear strength and settlement characteristic.
b. Design principles for foundations of the building based on th Egyptian geotechnical code of practice.

Description :

Soil Characteristics and Mechanics, Preliminarily definitions and Relationships, Soil Properties and Classifications, Stress in Soil and Soil Compressibility, Theory of Consolidation and Settlement, Shear Strength of Soil, Compaction of Soil, Lateral Earth Pressure and Retaining Walls, Site Investigation and Selection of Foundation, Bearing Capacity of Soil, Types of Foundation and Design Principles of Foundations.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Illustrate the origin of soil and the constituent relationships of soil matrix.
2 -	List different types of soil classification systems.
3 -	Define the load/stress distribution induced within soil layers.
4 -	Explain the settlement and shear strength of different soil types.
5 -	Estimate the suitable foundation depth, type and bearing capacity.
6 -	Choose the proper foundation design.
b.Intellectual Skills: :	
1 -	Differentiate between different soil types based on its physical and engineering properties as well as its mechanical characteristics.
2 -	Select proper foundation system and design according to the Egyptian geotechnical code of practice.
c.Professional and Practical Skills: :	
1 -	Apply the main findings in the soil technical report of site under investigation to design foundations.

2 -	Apply Egyptian geotechnical code of practice to design foundations properly.
3 -	Draw engineering drawing of foundation design output.
d.General and Transferable Skills: :	
1 -	Communicate effectively.
2 -	Manage time to meet deadlines.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Stress in Soil, Compressibility, Settlement.	4	2	2
Shear Strength and Compaction of Soil.	6	3	3
Lateral Earth Pressure and Retaining Wall	2	1	1
Site Investigation and Bearing Capacity of Soil.	2	1	1
Design Principles of Building Foundations	4	2	2
Revision	4	2	2
Soil Types, Matrix and Classification	8	4	4

Teaching And Learning Methodologies :

Lectures.

Research

Class Work

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	30.00		
Final Exam.	40.00		
In Class Quizzes	20.00		
Performance & Participation	10.00		

Course Notes :

Course notes are required.

Recommended books :

1. Text Book:
Principles of Geotechnical and Foundation Engineering - Lecture Notes , Bahr M.A., Al Azhar University, Cairo, Egypt.
2. Students Lecture Notes
3. Handouts
4. Recommended Readings:
a) Das, B. M.; Principles of Geotechnical Engineering, MA02116-4324.
b) Das, B.M.; Principles of Foundation Engineering, CA 93950.
c) Egyptian Geotechnical Code of Practice- 2nd Renewal (2002).

Periodicals :
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Web Sites :
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