

Faculty of Engineering & Technology

Foundations

Information :

Course Code : SCM 541 **Level :** Undergraduate **Course Hours :** 3.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Associate Professor	Ahmed Mohamed Abd Elkhaleq Ebid	15
Associate Professor	Ahmed Mohamed Abd Elkhaleq Ebid	15
Teaching Assistant	Mahmoud Mohamed Khalaf Ahmed	16
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Area Of Study :

This course aims to:

Understand the basics of soil bearing capacity according to the Egyptian Code of Practice.

Apply the concepts of lateral earth pressure on the design of sheet piles and retaining Walls

Understand the different types of shallow foundations and the design of isolated, combined, strap beams and raft foundations.

Comprehend the types of pile foundations including method of installation and calculation of vertical and lateral bearing capacity.

Description :

Design of shallow foundations, Pile foundations, Raft, Retaining walls, Sheet pile walls, Lateral earth pressure, bearing capacity of soil, Site investigation and choice of type of foundation.

Course outcomes :

a.Knowledge and Understanding: :

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| 1 - | a1- Generalizes the lateral forces that act between the retaining |
| 2 - | a2- Selects mathematics, science, and engineering for the design and |

b.Intellectual Skills: :

- | | |
|-----|---|
| 1 - | b1- Computes the lateral earth pressure and analyzes the stability of |
| 2 - | b2- Demonstrates the bearing capacity of soil for shallow foundations |
| 3 - | b3- Drive different solution for engineering problems. |
| 4 - | b4- Assess the obtained results accuracy. |

c.Professional and Practical Skills: :

- | | |
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| 1 - | c1- Implements quality control procedures during construction of |
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2 -	c2- Produces foundation engineering drawings
3 -	c3- Supervises foundation construction works.
d.General and Transferable Skills: :	
1 -	d1- Shares ideas and communicate with others.
2 -	d2- Manage time and meet deadlines

Course Topic And Contents :			
Topic	No. of hours	Lecture	Tutorial / Practical
Lateral Earth pressure	10	6	4
Design of Raft	5	3	2
Bearing Capacity of soil	10	6	4
Sheet pile and Retaining Structures	10	6	4
Design of Shallow Foundations	15	9	6
Pile types, method of Installation , vertical and lateral bearing capacity of single pile and pile group	15	9	6
Design of pile foundations	10	6	4

Teaching And Learning Methodologies :
Lecture
Class Work

Course Assessment :			
Methods of assessment	Relative weight %	Week No	Assess What
Final exam	40.00		
First Mid Term Exam	25.00		
Performance	10.00		
Second Mid Term Exam	25.00		

Course Notes :
Lecture Notes on Moodle

Recommended books :
" Principles of Foundation Engineering, Author: Braja M Das "