

## 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 :**

Upon successful completion of this course, the student should be able to:

- Understand the basic concepts and main principles
- Calculate the values of the essential terms
- Design and draw neat details
- Apply Codes provisions

Regarding earth pressure, retaining walls, bearing capacity, shallow foundations, deep foundations, pile capacity and pile caps

**Description :**

Design of shallow foundations, Pile foundations, Retaining walls, Sheet pile walls, Dewatering, Stability of slopes, Site investigation and choice of type of foundation.

**Course outcomes :**

**a. Knowledge and Understanding: :**

1 -	Define the main terms of earth pressure & retaining walls
2 -	List the main items of shallow foundations
3 -	List the main items of deep foundations
4 -	Define the main terms of pile capacity

**b. Intellectual Skills: :**

1 -	Calculate the values of earth pressure & retaining walls
2 -	Calculate the values of bearing capacity
3 -	Design the elements of shallow foundations
4 -	Assess issues of deep foundations
5 -	Calculate the values of pile capacity
6 -	Design the elements of pile caps

**c. Professional and Practical Skills: :**

1 -	Apply Code provisions regarding earth pressure & retaining walls
2 -	Apply Code provisions regarding bearing capacity
3 -	Draw neat details of shallow foundations
4 -	Prepare technical reports for deep foundations
5 -	Apply Code provisions regarding pile capacity
6 -	Draw neat details of pile caps

**d. General and Transferable Skills: :**

1 -	Work under stress
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**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Earth pressure & retaining walls	10	6	4
Bearing capacity	10	6	4
Shallow foundations	20	12	8
Deep foundations	5	3	2
Pile capacity	10	6	4
Pile caps	15	9	6
Revision	5	3	2

**Teaching And Learning Methodologies :**

Interactive Lec.
Discussion
Problem Solving
Project
Report / Present

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final exam	40.00		
First Mid Term Exam	15.00		
Project	10.00		
Quizzes / Assig.	10.00		
Report / Present.	10.00		
Second Mid Term Exam	15.00		

**Course Notes :**

Lecture Notes on Moodle
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**Recommended books :**

"Soil Mechanics and Foundation Engineering", K.R. Arora , 2004