

Faculty of Engineering & Technology

Reinforced Concrete 5

Information :

Course Code : SCM 514

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Professor	Khaled Mohamed Mohamed Heiza	1

Area Of Study :

- 1- Get familiar with the Strut and Tie Concept
- 2- Understand the requirements and the design of the deep beam and corbels.
- 3- Design pre-stressed concrete members.
- 4- Estimate the earthquake and wind loads on the structure.
- 5- Establish different lateral load resisting system.

Description :

Cracking limits, Water tanks, Footings and pile caps, Masonry walls: reinforced and un-reinforced

Course outcomes :

a.Knowledge and Understanding: :

- 1 - Address the advantage and limits of different lateral loads resisting systems
- 2 - Address the advantage of pre-stressed beams

b.Intellectual Skills: :

- 1 - Calculate lateral loads on structures (wind & earthquake)
- 2 - Distribute the lateral loads on the resisting elements
- 3 - Design of resisting elements (shear walls, MRF)
- 4 - Design of determinate pre-stressed beams

c.Professional and Practical Skills: :

- 1 - Draw native reinforcement details for shear walls and MRF
- 2 - Draw native reinforcement details pre-stressed beams

d.General and Transferable Skills: :

- 1 - Work in stressful environment and within constraints

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Calculation of wind loads	4	3	1
Calculation of earthquake loads	8	6	2
Lateral loads resisting systems	4	3	1
Design and detailing of shear walls	12	9	3
Design and detailing of moment resisting frames	12	9	3
Principals of pre-stressed determined beams	8	6	2
Design and detailing of prestressed beams	12	9	3

Teaching And Learning Methodologies :

Class Lectures

Tutorials

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 :

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Periodicals :

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Web Sites :

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