

**Faculty of Engineering & Technology**  
**Inspection and maintenance of structurals**

**Information :**

**Course Code :** SCM 591

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Structural Engineering & Construction Management

**Instructor Information :**

Title	Name	Office hours
Professor	Ahmed Farouk Mohamed Hassan Deifalla	4
Professor	Ahmed Farouk Mohamed Hassan Deifalla	4
Professor	Yahia Abdel Zaher Ali Abdelaal El gezery	1
Assistant Lecturer	Youssef Ahmed Elsayed Kamaleldin Ahmed Awad	9
Assistant Lecturer	Noura Khedr Abdul raheem Ahmed	
Assistant Lecturer	Muhammad Diab Saadeldin Abdl aal	2
Assistant Lecturer	Ahmed Amr Kadry Ahmed Shaheen	
Assistant Lecturer	Youssef Ahmed Elsayed Kamaleldin Ahmed Awad	9

**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

Regarding concrete deterioration durability evaluation of concrete structures repair techniques strengthening with steel & FRP jackets strengthening by concrete jacket inspection & repair of masonry structures.

**Description :**

Introduction: causes of distress and reasons for repair, approach and strategy of repair, and anamnesis, Diagnosis, Repair, Strength evaluation of concrete elements and concrete structures, Repair materials, Repair methods, Repair and Strengthening of concrete elements, Inspection and repair of masonry, Case studies.

**Course outcomes :**

**a. Knowledge and Understanding: :**

1 -	Define the main terms of concrete deterioration
2 -	Describe the main concept of durability
3 -	List the main items of repair techniques

**b. Intellectual Skills: :**

1 -	Solve problems regarding evaluation of concrete structures
2 -	Assess issues of repair techniques
3 -	Calculate the values of strengthening with steel & FRP jackets
4 -	Calculate the values of strengthening by concrete jacket

- 5 - Calculate the values of inspection & repair of masonry structures

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

- 1 - Prepare technical reports for durability  
2 - Prepare technical reports for repair techniques  
3 - Apply Code provisions regarding strengthening with steel & FRP jackets  
4 - Apply Code provisions regarding strengthening by concrete jacket  
5 - Draw neat details of inspection & repair of masonry structures

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

- 1 - Cooperate and communicate effectively

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Concrete deterioration	8	6	2
Durability	8	6	2
Evaluation of concrete structures	8	6	2
Repair techniques	8	6	2
Strengthening with steel & FRP jackets	8	6	2
Strengthening by concrete jacket	8	6	2
Inspection & repair of masonry structures	8	6	2
Revision	4	3	1

**Teaching And Learning Methodologies :**

Interactive Lec.  
Discussion  
Problem Solving  
Report / Presentation

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
1st Mid-term exam	15.00		
2nd Mid-term exam	15.00		
Assignments	15.00		
Final exam	40.00		
Report	15.00		

**Course Notes :**

Handout notes on MOODLE

---

**Recommended books :**

"Repair And Rehabilitation Of Concrete Structures", Poonam I. Modi, PHI Learning Pvt Ltd (2016)