

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
Lecturer	Youssef Ahmed Elsayed Kamaleldin Ahmed Awad	12
Teaching Assistant	Mahmoud Mohamed Khalaf Ahmed	

Area Of Study :

By the end of this course the student should be able to:

- ✓ Evaluate the deteriorations in concrete.
- ✓ Suggest the suitable repair and strengthening techniques for each case.
- ✓ Design strengthening jackets for concrete elements.

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 -	a1- Outline the main causes of deteriorations in concrete
2 -	a2- Define repair and strengthening techniques
3 -	a3- Describe the durability and maintenance of concrete structures.
4 -	a4- Identify the building status to decide the optimum action technically and

b.Intellectual Skills: :

1 -	b1- Analyze the cause of cracks
2 -	b2-Select the required repair method
3 -	b3-Design steel, FRP and concrete jackets

c.Professional and Practical Skills: :

1 -	c1- Prepare technical report taking into consideration the safety
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d.General and Transferable Skills: :

1 -	d1-Plan within a group
2 -	d2-Organize time and deadline
3 -	d3- Summarize information and data to prepare technical report

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	8	6	2
Concrete Deterioration	4	3	1
Durability	8	6	2
Evaluation of concrete structures.	4	3	1
Repair Techniques	8	6	2
Strengthening with steel and FRP jackets	12	9	3
Strengthening by concrete jacket	8	6	2
Inspection and repair of masonry structures	8	6	2

Teaching And Learning Methodologies :

Lecture

Research and Report

Class work

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st Mid-term exam	15.00		
2nd Mid-term exam	15.00		
Assignments	10.00		
Final exam	40.00		
Performance	10.00		
Report	10.00		

Course Notes :

Handouts by the lecturer