

**Faculty of Engineering & Technology**

**Advanced technology of Construction Materials**

**Information :**

**Course Code :** SCM 414

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

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

**Instructor Information :**

Title	Name	Office hours
Professor	Mohamed Abdel Moaty Khalaf Mohamed	13
Professor	Mohamed Abdel Moaty Khalaf Mohamed	13
Assistant Lecturer	Youssef Ahmed Elsayed Kamaleldin Ahmed Awad	4
Assistant Lecturer	Youssef Ahmed Elsayed Kamaleldin Ahmed Awad	4
Assistant Lecturer	Reham Milad Kamel Samaan	3

**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 advanced construction materials fibers & polymers properties fabrication techniques stiffness & strength characteristics flexural strengthening of RC with ACM shear strengthening of RC with ACM axial strengthening of RC with ACM

**Description :**

The main concern and focus of this course will be about the Advanced concrete technology, Advanced technology of finishing and insulating materials, Adapted technology of alternative building materials for low-cost construction, New developments and innovative uses of construction materials, Miscellaneous non-conventional construction materials and products : refractories, polymers and plastics, injection materials and joint sealants, composite, optical fibers, carbon fibers, Material-related failures of structures, Maintenance and repair techniques of materials in structures.

**Course outcomes :**

**a.Knowledge and Understanding: :**

1 -	a1- Define the main terms of advanced construction materials
2 -	a2- List the main items of fibers & polymers properties
3 -	a3- List the main items of fabrication techniques

**b.Intellectual Skills: :**

1 -	b1- Calculate the values of fibers & polymers properties
2 -	b2- Solve problems regarding stiffness & strength characteristics
3 -	b3- Calculate the values of flexural strengthening of RC with ACM
4 -	b4- Calculate the values of shear strengthening of RC with ACM
5 -	b5- Calculate the values of axial strengthening of RC with ACM

**c. Professional and Practical Skills :**

1 -	c1- Prepare technical reports for fabrication techniques
2 -	c2- Demonstrate presentation regarding flexural strengthening of RC with ACM
3 -	c3- Demonstrate presentation regarding shear strengthening of RC with ACM
4 -	c4- Demonstrate presentation regarding axial strengthening of RC with ACM

**d. General and Transferable Skills :**

1 -	d1- Cooperate and communicate effectively
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**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
advanced construction materials	10	6	4
fibers & polymers properties	10	6	4
fabrication techniques	10	6	4
stiffness & strength characteristics	10	6	4
flexural strengthening of RC with ACM	10	6	4
shear strengthening of RC with ACM	10	6	4
axial strengthening of RC with ACM	10	6	4
Revision	5	3	2

**Teaching And Learning Methodologies :**

Interactive Lec.
Discussion
Problem Solving
Report / Present

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final Exam	40.00		
Mid- Exam I, II	30.00		
Quizzes / Assig	15.00		
Report / Present	15.00		

**Course Notes :**

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**Recommended books :**

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**Periodicals :**

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**Web Sites :**

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