Faculty of Engineering & Technology

Structural Analysis 2

Information :

Course Code :	SCM 212	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Professor	Bahaa sharaf ismail tork	5
Associate Professor	MOHAMED GALAL KHALIL IBRAHIM ELSHERBINI	9
Associate Professor	MOHAMED GALAL KHALIL IBRAHIM ELSHERBINI	9
Assistant Lecturer	Mohamed Ahmed Reda Abas Ahmed	13
Assistant Lecturer	Mohamed Ahmed Reda Abas Ahmed	13
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Area Of Study :

1. Calculate the support reactions of arch and cable structures
2. Determine the geometry of parabolic and segmental arches
3. Calculate the internal forces at selected points of the arch and their maximum values.

SCM 212: Structural Analysis (2) 2

4. Determine the maximum tension and the geometry of the cable supporting concentrated or distributed loads.
5. Construct the influence lines of support reactions and internal forces in beams, cantilever beams, trusses and frames.
6. Calculate the maximum, minimum and extreme values of the internal forces due to moving loads using the influence lines.

Description :

Analysis of beams subjected to moving loads, Introduction to space structures, Influence lines for statically determinate structures.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Understand basic concepts of structural modeling.
2 -	Acquire knowledge of techniques for solving different types of statically determinate plane arch and cable structures.
b.Intellectual Skills: :	
1 -	Analyze the engineering problems.
2 -	Understand the behavior of structures
3 -	Derive different solutions for engineering problems.

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4 -	Assess the accuracy of the obtained results.
c.Professional and Practical Skills: :	
1 -	Be able to handle different types of structures
2 -	Be able to handle different structural systems
3 -	Apply knowledge of mathematics, science and engineering.
d.General and Transferable Skills: :	
1 -	Manage time and meet deadlines

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Revision of prerequisite topics related to the course contents.	4	3	1
Types of arches and their use in engineering applications. Analysis of Arches.	12	9	3
Hanging cables supporting concentrated loads and uniformly distributed loads.	12	9	3
Influence lines for beams and cantilever beams, calculation of extreme values.	12	9	3
Influence lines for trusses.	12	9	3
Influence lines for frames and arches.	8	6	2

Teaching And Learning Methodologies :

Lectures

Class Work

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 :

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Recommended books :

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Periodicals :

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Web Sites :
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