

Faculty of Engineering & Technology

Structural Analysis 1

Information :

Course Code : SCM 211

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Lecturer	Dina Muhammad Fathy Ors	23
Assistant Lecturer	Nada Mohamed Abd El Hamid Ali Mohamed	4

Area Of Study :

- Determine the reactions at the supports.
- Determine of the Internal Forces Diagrams for the statically determinate structures (Beams-Frames-Trusses-Arches) under applied static loads.
- Determine the stability and determinacy of structures.

Description :

Types of structures, Loads, Supports, Determination of reactions, Internal forces, Analysis of beams, Frames and plane trusses.

Course outcomes :

a. Knowledge and Understanding: :

1 -	Recognize different types of loads (concentrated, distributed) and supports(roller, hinge & fixed).
2 -	Define the different types of staining actions.
3 -	Understand different types of statically determinate plane structures (beams, frames and trusses)
4 -	Identify the internal forces in structural members and determinacy and stability of structures.

b. Intellectual Skills: :

1 -	Analyze statically determinate structures.
2 -	Compare different solution alternatives for same statical system of beams, frames and trusses
3 -	Assess the stability and determinacy of plane structure.

c. Professional and Practical Skills: :

1 -	Handle different types of plane structures
2 -	Handle different structural systems

d. General and Transferable Skills: :

1 -	Manage time and meet deadlines
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Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to structural analysis, review of topics of prerequisite related to course	4	3	1
Types of structures, loads and supports, conditions of equilibrium, determinacy and stability	8	6	2
Free body diagrams and determination of reactions for various types of structures, definition of internal forces in plane structures	12	9	3
Calculation of internal forces for beams and frames and production of internal force diagrams.	20	15	5
Analysis of pin-jointed structures of various configurations	16	12	4

Teaching And Learning Methodologies :

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 :

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Recommended books :

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Periodicals :

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Web Sites :

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