

Faculty of Engineering & Technology

Structural Mechanics 1

Information :

Course Code : SCM 311

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	12
Professor	Bahaa sharaf ismail tork	12
Teaching Assistant	Mahmoud Mohamed Khalaf Ahmed	
Teaching Assistant	Ahmed Taher Abdelhamed Mohamed Yousef	
Teaching Assistant	Ahmed Mohamed Abdelnaby Ali Shafay	14

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 stresses & strains cross section properties straining actions normal stresses shearing stresses combined stresses

Description :

Properties of plane areas, Stresses and strains in sections due to axial forces and bending moments, Shear stresses in symmetrical solid and hollow sections, Torsional shear stresses in circular and non-circular sections, Combined stresses, Principal stresses

Course outcomes :

a. Knowledge and Understanding: :

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|-----|---|
| 1 - | Define the main terms of stresses & strains |
| 2 - | List the main items of straining actions |

b. Intellectual Skills: :

- | | |
|-----|--|
| 1 - | Calculate the values of stresses & strains |
| 2 - | Calculate the values of cross section properties |
| 3 - | Calculate the values of normal stresses |
| 4 - | Calculate the values of shearing stresses |
| 5 - | Solve problems regarding combined stresses |

c. Professional and Practical Skills: :

- | | |
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| 1 - | Prepare technical reports for cross section properties |
| 2 - | Draw neat details of straining actions |

d.General and Transferable Skills: :

1 - Search for information and self-learning discipline

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction: Concept of stress/strains	4	3	1
Properties of cross sections	8	6	2
Straining actions	8	6	2
Normal stresses	12	9	3
Shearing stresses	16	12	4
Combined and principal stresses	8	6	2
Revision	4	3	1

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 :

Textbook: - "Structural Analysis", R.C. Hibbeler, Prentice Hall, Singapore,2005
Additional References: - Handout notes on MOODLE

Periodicals :

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Web Sites :

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