

**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 :**

- Determine the normal stresses at sections due to axial force, bending moment.
- Determine the shear stresses at sections due to Shear forces for solid and hollow sections
- Determination of combined stresses and principle stresses
- Determine the shear stresses at sections due to torsion moment in circular and non-circular sections.
- Determine the deformation in statically determinate trusses by virtual work

**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: :**

1 -	Define basic concepts of structural modeling.
2 -	Understand the stresses induced in structures

**b. Intellectual Skills: :**

1 -	Ability to identify, formulate and analyze the engineering problems
2 -	Ability to derive different solution alternatives for engineering problems .
3 -	Ability to assess the obtained results accuracy.

**c. Professional and Practical Skills: :**

1 -	Ability to handle different types of structures
2 -	- Ability to handle different structural systems

**d.General and Transferable Skills: :**

1 - Ability to practice team work and present results

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Properties of plane areas	4	4	1
Stresses and strains in sections due to axial forces and bending moments	6	6	3
Shear stresses in symmetrical solid and hollow sections.	10	10	3
Torsional shear stresses in circular and non-circular sections	10	10	3
Combined stresses	6	6	2
Determination of principle stresses	6	6	2

**Teaching And Learning Methodologies :**

Class Lectures

Tutorials

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
First Mid term Exam	20.00	6	
Quiz 1	5.00	3	
Quiz 2	5.00	9	
Second Mid-term Exam	20.00	11	
Final Exam	40.00	15	

**Course Notes :**

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**Recommended books :**

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**Periodicals :**

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**Web Sites :**

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