

## Faculty of Engineering & Technology

### Stress Analysis

**Information :**

**Course Code :** MAN 232      **Level :** Undergraduate      **Course Hours :** 3.00- Hours

**Department :** Department of Mechanical Engineering

**Instructor Information :**

Title	Name	Office hours
Professor	Mohamed Tarek Ibrahim Mohamed Ali Elwakad	2
Lecturer	Arafa Soliman Sobh Khalil Arafa	1
Teaching Assistant	Eman Mohamed Hammad Ahmed	
Teaching Assistant	Ahmed Ibrahim Sadek Mostafa Elgindy	

**Area Of Study :**

1. Develop engineering ability and analyze a given mechanical elements under different stresses.
2. Discuss problem in a simple and logical manner and to apply its solution a few fundamental and well-understood principles of stress analysis.

**Course outcomes :**

**a. Knowledge and Understanding: :**

1 -	Identify the principles of design including elements stress analysis
2 -	Define the characteristics of stress analysis related to mechanical production engineering

**b. Intellectual Skills: :**

1 -	Analyze and interpret data, and design experiments to obtain primary data
2 -	Classify numerical data and apply analytical methods for engineering design purposes
3 -	Think in a creative and innovative way in stress and strain problem solving and design

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

1 -	Explain a component or system, and carry out stress analysis problems.
2 -	Analyze knowledge of science, information technology, design, and engineering practice to solve stress problems

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

1 -	Introduce ideas and solutions for many practical and engineering problems efficiently in predetermined time plan.
2 -	Use digital libraries and/or Learning systems

### **Course Topic And Contents :**

<b>Topic</b>	<b>No. of hours</b>	<b>Lecture</b>	<b>Tutorial / Practical</b>
bending moment diagram, Normal stress	12	6	6
Shear stress & Torsional Stress	10	6	4
Combined stress	8	4	4
Principal stresses, , Allowable stresses	4	2	2
Maximum shear stress	4	2	2
Reactions & Normal force diagram, Shear force diagram	8	4	4
Mohr's circle representation	4	2	2
Project follow -up.	4	2	2
Midterm Exams ,Quizzes	6	2	4

### **Teaching And Learning Methodologies :**

Interactive Lecturing

Problem solving

Discussion

### **Course Assessment :**

<b>Methods of assessment</b>	<b>Relative weight %</b>	<b>Week No</b>	<b>Assess What</b>
Assignments, Participation, & Quizzes	20.00		Reports follow up during tut. /lab work, & written exam
Final Exam	40.00	14	Written Exam
Mid-term Exams	30.00		Written Exam
Project.	10.00	12	Practical

### **Course Notes :**

Lecture notes on the course moodle page, FUE website.