Discipline : MECHANICAL ENGINEERING	Semester:- 3rd	Name of the Teaching Faculty: - BHAGBAN PARIDA
Subject:- SOM (TH-2)	No of Days/per Week Class Allotted :- 04	Semester From:-15.09.2022 To:- 22.12.2022
Week	Class Day	Theory
1st	1st	Types of load, stresses & strains,(Axial and tangential)
	2nd	Hooke's law, Young's modulus, bulk modulus, modulus of rigidity
	3rd	Poisson's ratio, relation between three elastic constants,
	4th	Principle of super position, stresses in composite section
2nd	1st	Problems on stresses in composite section
	2nd	Temperature stress, determine the temperature stress in composite bar (single core)
	3rd	Simple problems on above.
	4th	Strain energy and resilience
3rd	1st	Stress due to gradually applied, suddenly applied and impact load
	2nd	Simple problems on above.
	3rd	Definition of hoop and longitudinal stress, strain
	4th	Derivation of hoop stress, problems
4th	1st	Derivation of longitudinal stress, problems
	2nd	Derivation of hoop strain, problems
	3rd	Derivation of longitudinal strain ,problems
	4th	Derivation of volumetric strain ,problems
5th	1st	Computation of the change in length, diameter and volume
	2nd	Simple problems on above

	3rd	Determination of normal stress on oblique plane
	4th	Determination of shear stress on oblique plane
6th		Determination of resultant stress on oblique plane
	1st	
	2nd	Problems on above
	3rd	Location of principal plane and computation of principal stress
	4th	Problems on above
7th	1st	Maximum shear stress
	2nd	Problems on above
	3rd	Drawing Mohr's circle
	4th	Problems on Mohr's circle
8th	1st	Types of beam and load
	2nd	Concepts of Shear force and bending moment
	3rd	Shear Force diagram
	4th	Bending moment diagram and its salient features
9th	1st	Practice of drawing SFD and BMD
	2nd	SFD and BMD in cantilever beam
	3rd	SFD and BMD simply supported beam
	4th	SFD and BMD over hanging beam
10th	1st	SFD and BMD under point load and uniformly distributed load
	2nd	Problems on above
	3rd	Theory of bending
	4th	Assumptions in the theory of bending

11th	1st	Bending equation
	2nd	Problems on Bending equation
	3rd	Concept of Moment of resistance
	4th	Solve simple problems
12th	1st	Concept of Section modulus
	2nd	Solve simple problems
	3rd	Concept of Neutral axis
	4th	Solve simple problems
13th	1st	Define column and loads applied on it
	2nd	Axial load, Eccentric load on column,
	3rd	Direct stresses and Bending stresses
	4th	Maximum& Minimum stresses
14th	1st	Numerical problems on above
	2nd	Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions and problems solving.
	3rd	Concept of torsion
	4th	Assumption of pure torsion
15th	1st	The torsion equation for solid and hollow circular shaft
	2nd	Solve simple problems
	3rd	Comparison between solid and hollow shaft subjected to pure torsion
	4th	Solve simple problems

Bhagwan Panda
TEACHING FACULTY

HOD, MECHANICAL