LESSION PLAN

Discipline :Mechanical engineering	Semester : 3RD	Name of the Teachnig Faculty : Mrs LOPAMUDRA SWAIN
Subject: Strength Of Materials	No.of days/Per weeks Class Alloted Weeks	Semester :3rd No.of Weeks : 4
Weeks	Class day	Theory
3rd week(Sep-2022)	1st	Simple stress& strain ,Types of load, stresses & strains,(Axial and tangential) Hooke's Law
	2nd	Types of load, stresses & strains,(Axial and tangential) Hooke's Law
	3rd	Young's modulus, bulk modulus, modulus of rigidity
	4th	Temperature stress, determine the temperature stress in composite bar (single core)
4th week	1st	Temperature stress, determine the temperature stress in composite bar (single core)
	2nd	Poisson's ratio, derive the relation between three elastic constants
	3rd	Principle of super position, stresses in composite section
	4th	Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
2nd week (Oct-2022)	1st	Simple problems on above,Thin cylinder and spherical shell under internal pressure
		CLASS TEST -1
	2nd	Definition of hoop and longitudinal stress, strain,Derivation of hoop stress, longitudinal stress, hoop strain
	3rd	Computation of the change in length, diameter and volume,longitudinal strain and volumetric strain
	4th	Two dimensional stress systems ,Determination of normal stress, shear stress and resultant stress on oblique plane
3rd week	1st	Determination of normal stress, shear stress and resultant stress on oblique plane
	2nd	Location of principal plane and computation of principal stress
	3rd	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
	4th	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
4th week	1st	Bending moment& shear force
	2nd	Types of beam and load
	3rd	Types of beam and load
	4th	Concepts of Shear force and bending moment
1st week (Nov - 2022)	1st	Shear Force and Bending moment diagram and its salient features
	2nd	illustration of SFD & BMD in cantilever beam, simply supported beam

	3rd	illustration of SFD & BMD in cantilever beam, simply supported beam
	4th	illustration of SFD & BMD in cantilever beam, simply supported beam
2nd	1st	SFD & BMD of over hanging beam under point load and uniformly distributed load
		CLASS TEST - 2
	2nd	SFD & BMD of over hanging beam under point load and uniformly distributed load
	3rd	Solve Simple problem.
	4th	Theory of simple bending
3rd	1st	INTERNAL
	2nd	INTERNAL
	3rd	INTERNAL
	4th	INTERNAL
4th	1st	Assumptions in the theory of bending,Bending equation, Moment of resistance, Section modulus& neutral axis
	2nd	Solve simple problems
	3rd	Solve simple problems
	4th	Combined direct & bending stresses
1st week (Dec - 2022)	1st	Combined direct & bending stresses
	2nd	Combined direct & bending stresses
	3rd	Define column
	4th	Axial load, Eccentric load on column
2nd	1st	Axial load, Eccentric load on column
	2nd	Axial load, Eccentric load on column
	3rd	Direct stresses, Bending stresses, Maximum& Minimum stresses
	4th	Direct stresses, Bending stresses, Maximum& Minimum stresses
3rd	1st	Direct stresses, Bending stresses, Maximum& Minimum stresses
	2nd	Numerical problems on above
	3rd	Buckling load computation using Euler's formula
	4th	Torsion
4th	1st	Assumption of pure torsion
	2nd	The torsion equation for solid & hollow circular shaft
	3rd	Comparison between solid and hollow shaft subjected to pure torsion
	4th	Numerical problems on above

Lopamudra Swain