GOVERNMENT POLYTECHNIC MAYURBHANJ, LESSON PLAN

Discipline: MECHANICAL ENGINEERING		**Semester:3rd Sem**		**Name of the Teaching faculty : D. D. Pramanik**
Subject:STRENGTH OF MATERIAL (C202)		**No.of Days/Perweek classallotted:04**		**Semester from date:15.09.22 To 21.01.23**
MONTH	**week**	**DAY**	**CHAPTER**	**TO TOPIC COVER ACCORDING TO LESSON PLAN**
SEPTEMBER	3rd	4th	CHAPTER-1	1.**INTRODUCTION:** Simple stress& strain
		5th		Types of load, stresses &strains, (Axial and tangential),
	4th	1st		State Hooke's law, Young's modulus
		2nd		State bulk modulus, modulus of rigidity, Poisson's ratio
		4th		Derive the relation between three elastic constants,
		5th		Principle of super position, stresses in composite section
	5th	1st		Temperature stress, determine the temperature stress in composite bar (single core)
		2nd		Strain energy and resilience, Stress due to gradually applied,
		4th		suddenly applied and impact load.
		5th		Simple problems on above.
OCTOBER	3rd	1st	CHAPTER-2	**2.0 Thin cylinder and spherical shell under internal pressure**
		2nd		Definition of hoop and longitudinal stress, strain
		4th		Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain
		5th		Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain
	4th	1st		Computation of the change in length, diameter and volume
		2nd		Solve of simple problem.
		4th		**CLASS TEST-1**
	5th	1st		**3.0 Two dimensional stress systems**
		2nd		Determination of normal stress, shear stress and resultant stress on oblique plane
		4th		Location of principal plane and computation of principal stress

		5th	CHAPTER-3	Solve of simple problem.
NOVEMBER	1st	2nd		Determination of normal stress, shear stress and resultant stress
		4th		Location of principal plane and computation of principal stress
		5th		Solve of simple problem
	2nd	1st		Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
		4th		Question Discussion
		5th		Solve of simple problem.
	3rd	1st	CHAPTER-4	**4.0 Bending moment& shear force, introduction**
		2nd		Types of beam and load
		4th		Concepts of Shear force and bending moment
		5th		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam,
	4th	1st		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam,
		2nd		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, under point load .
		4th		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam,under UDL
		5th		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, under pointed load and UDL
	5th	1st		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam,
		2nd		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam , under point load .
DECEMBER	1st	4th		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam , under UDL
		5th		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam , under pointed load and UDL
	2nd	1st		Shear Force and Bending moment diagram and its salient features illustration in over hanging beam
		2nd		QUESTION DISCUSION
		4th		Solve numerical problem
		5th		**5.0 Theory of simple bending**

	3rd	1st	CHAPTER-5	Assumptions in the theory of bending,
		2nd		Bending equation
		4th		Moment of resistance.
	4th	1st		Section modulus& neutral axis.
		2nd	CHAPTER-6	**6.0 Combined direct & bending stresses**
		4th		INTERNAL EXAMINATION
		5th		INTERNAL EXAMINATION
JANUARY	1st	1st		Define column
				Axial load, Eccentric load on column,
		2nd		Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. .
		4th		Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions.
		5th	CHAPTER-7	**7.0 Torsion,Assumption of pure torsion.**
	2nd	1st		The torsion equation for solid circular shaft
		2nd		The torsion equation for hollow circular shaft
		4th		CLASS TEST-2
		5th		Comparison between solid and hollow shaft subjected to pure torsion.
	3rd	1st		Solve numerical problem
		2nd		REVISION
		4th		QUESTION DISCUSION
		5th		REVISION
		ATTAINDANCE		CLOSED

HOD
MECHANICAL ENGINEERING

SUBJECT EXPERT

ACADMIC CO-ORDINATOR