GOVT.POLYTECHNICMAYURBHANJLESSONPLAN-2024/25(WINTER)

Discipline: MEACHANICAL ENGG.	Semester:3RDSem		Name of theTeaching Faculty:THAKURA HANSDAH
Subject: SOM	No.of Days/Perweek classallotted:04		SemesterFromdate:1.07.2024 ToDate:08.11.2024

MONTH	Week	DAY		Topics
JULY	1ST	2ND	CHAPTER 1	**1.INTRODUCTION:** **Simple stress& strain**
		3RD		Types of load, stresses &strains, (Axial and tangential),
		4TH		State Hooke's law, Young's modulus
		5TH		State bulk modulus, modulus of rigidity, Poisson's ratio
	2ND	2ND		Derive the relation between three elastic constants,
		3RD		Principle of super position, stresses in composite section
		4TH		Principle of super position, stresses in composite section
		5TH		Temperature stress, determine the temperature stress in composite bar (single core)
		2ND		Temperature stress, determine the temperature stress in composite bar (single core)
		3RD		Strain energy and resilience, Stress due to gradually applied,

		3RD			suddenly applied and impact load.
			4TH		Simple problems on above.
			5TH		Simple problems on above.
		4TH	2ND		Simple problems on above
			3RD	CHAPTER-2	**2.0 Thin cylinder and spherical shell under internal pressure**
			4TH		Definition of hoop and longitudinal stress, strain
			5TH		Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain
			2ND		Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain
		5th	2ND		Computation of the change in length, diameter and volume
			3RD		Solve of simple problem.
	AUGUST		4TH		3**.0 Two dimensional stress systems**
		1ST	5th	CHAPTER-3	Determination of normal stress, shear stress and resultant stress on oblique plane
			2ND		Determination of normal stress, shear stress and resultant stress on oblique plane.

		2ND	3RD		Location of principal plane and computation of principal stress
			4TH		Solve of simple problem.
			5TH		**CLASS TEST-1**
		3rd	2ND		Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
			3RD		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.
		4th	2ND		Solve of simple problem.
			3RD	CHAPTER-4	**4.0 Bending moment& shear force** introduction
			4TH		Types of beam and load
			5TH		Concepts of Shear force and bending moment
		5th	2ND		Shear Force and Bending moment diagram and its salient features illustration in cantilever beam,
			3RD		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
	SEPTEMBER	1ST	2ND		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam,
			3RD		Shear Force and Bending moment diagram and its salient features illustration in simply supported beam , under point load .
			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
					Shear Force and Bending moment diagram and its salient features illustration in over hanging beam,
		2ND	2ND		Shear Force and Bending moment diagram and its salient features illustration in over hanging beam , under point load .
			3RD		Shear Force and Bending moment diagram and its salient features illustration in over hanging beam , under UDL
			4TH		Shear Force and Bending moment diagram and its salient features illustration in over hanging beam , under pointed load and UDL
			5TH		QUESTION DISCUSION

		3RD	2ND		Solve numerical problem
			3RD		Solve numerical problem
			4TH		Solve numerical problem
			5TH	CHAPTER-5	**5.0 Theory of simple bending**
			5TH		Assumptions in the theory of bending,
		4TH	2ND		Bending equation.
			3RD		Moment of resistance.
			4TH		Section modulus& neutral axis.
			5TH		**INTERNAL EXAMINATION**
		5th	2ND		QUESTION DISCUSION
			3RD		Solve simple problem
			4TH		Solve simple problem
			5TH		Solve simple problem
		1ST		CHAPTER-6	**6.0 Combined direct & bending stresses**
			2ND		Define column

	OCTOBER		4TH		Axial load, Eccentric load on column,
			5TH		Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above. .
		3RD	2ND		Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions.
			3RD		Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions.
			4TH		Numerical problems on above
			5TH		Numerical problems on above
		4TH	2ND		Numerical problems on above
			3RD		Numerical problems on above
			4TH		**7.0 Torsion**
			5TH		Assumption of pure torsion.
		5TH	2ND		The torsion equation for solid circular shaft
			3RD		The torsion equation for hollow circular shaft
			4TH		The torsion equation for hollow circular shaft

			5TH		Solve numerical problem .
	NOVEMBER	2ND		CHAPTER-7	Solve numerical problem
			2ND		Comparison between solid and hollow shaft subjected to pure torsion.
			3RD		Comparison between solid and hollow shaft subjected to pure torsion
			4TH		CALSS TEST-2
			5TH		REVISION
			4TH		
					QUESTION DISCUSION
			2ND		
			3RD		CLASS TEST-2
			4TH		CLASS TEST-2
			5TH		
			2ND		REVISION
			ATTAINDANCE		CLOSED