GOVT.POLYTECHNICMAYURBHANJ LESSONPLAN-2021/22(WINTER)

Discipline: MEACHANICAL ENGG.		Semester:3rdSem		Name of theTeachingFaculty:D.D. PRAMANIK
SUBJECT:STRENGTH OF MATERIAL		No.of Days/Perweek classallotted:04	CHAPTER	SemesterFromdate:1.08.2023 ToDate:30.11.2023
MONTH	**Week**	**DAY**		**TOPIC**
AUGUST	1ST	*1st*	CHAPTER -1	**1.0 Simple stress& strain** 1.1 Types of load, stresses & strains,(Axial and tangential) Hooke's law, Young's modulus,
		1st		bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic caonstant
		5TH		Derive the relation between three elastic constants,
	2ND	*1st*		1.2 Principle of super position, stresses in composite section
		1st		1.3 Temperature stress, determine the temperature stress in composite bar (single core)
		2nd		1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
		5TH		Question Discussion
		1st		**Solve of simple problem**
		1st		Solve of simple problem

	3RD	2nd		**2.0 Thin cylinder and spherical shell under internal pressure** 2.1 Definition of hoop and longitudinal stress, strain
		5TH		**CLASS TEST-1**
	4TH	*1st*	CHAPTER-2	strain and volumetric strai
		1st		2.3Computation of the change in length, diameter and volume
		2nd		**CLASS TEST-1**
		5th		Solve of simple problem
	5TH	*1st*		Solve of simple problem
		1st		Solve of simple problem
	2ND	*1st*		**3.0 Two dimensional stress systems** Introduction of Normal stress, Principal plan, shear stress etc
		1st		3.1 Determination of normal stress, shear stress and resultant stress on oblique plane
		2nd		3.1 Determination of normal stress, shear stress and resultant stress on oblique plane
		5th	chapter-3	3.2 Location of principal plane and computation of principal stress
	3RD	*1st*		3.3 Location of principal plane and computation of principal stress andMaximum shear stress using Mohr's circle
		1st		3.3 Location of principal plane and computation of principal stress andMaximum shear stress using Mohr's circle
SEPTEMBER		2nd		Question Discussion
		5TH		Solve of simple problem.
		1st		**4.0 Bending moment& shear force** 4.1 Types of beam and load

	4TH	1st		4.2 Concepts of Shear force and bending moment of cantilevern beam with ponted load
		2nd		4.2 Concepts of Shear force and bending moment of
		5TH		cantilevern beam UDL
	5TH	*1st*		Shear Force and Bending moment diagram and its salient features illustration in , simply supported beam under point load .
		1st		Shear Force and Bending moment diagram and its salient features illustration in , simply supported beam under UDL
		2nd	CHAPTER-4	Solve numerical problem cantilever .simply supported and over hanging beam
		5TH		**INTERNAL EXAMINATION**
	1ST	*1st*		Solve numerical problem cantilever .simply supported and over hanging beam
		1st		Solve numerical problem cantilever .simply supported and over hanging beam
		2nd		Solve numerical problem cantilever .simply supported and over hanging beam
		5TH		Solve numerical problem cantilever .simply supported and over hanging beam
OCTOBER	2ND	*1st*		**5.0 Theory of simple bending.** 5.1 Assumptions in the theory of bending,
		1st	chapter-5	5.2 Bending equation, Moment of resistance, Section modulus& neutral axis.
		2nd		5.2 Bending equation, Moment of resistance, Section modulus& neutral axis.
		5TH		5.3 Solve simple problems.
		1st		5.3 Solve simple problems.
		1st		**6.0 Combined direct & bending stresses** 6.1 Define column Axial load, Eccentric load on column,

	3RD	2nd	CHAPER-6	6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above
		5TH		6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on abo
		1st		6.4 Buckling load computation using Euler's formula (no derivation) inColumns with various end conditions
	1ST	1st	chapter-7	**7.0 Torsion** **7.1 Assumption of pure torsion**
		2nd		7.2 The torsion equation for solid shaft
		5TH		
		1st		**CLASS TEST-2**
		1st		7.2 The torsion equation for solid shaft
		1st		7.1 The torsion equation for hollow circular shaft
		2nd		7.1 The torsion equation for hollow circular shaft
NOVEMBER	2ND	5TH		7.2 Comparison between solid and hollow shaft subjected to pure torsion and solvr the numerical problem on above.
		1st		7.2 Comparison between solid and hollow shaft subjected to pure torsion and solvr the numerical problem on above.
		1st		SOLVE SIMPLE NUMERICAL PROBLEM
		2nd		SOLVE SIMPLE NUMERICAL PROBLEM
	3RD	5TH		Comparison between solid and hollow shaft subjected to pure torsion and solvr the numerical problem on above
		1st		7.2 Comparison between solid and hollow shaft subjected to pure torsion and solvr the numerical problem on above.
		1st		SOLVE SIMPLE NUMERICAL PROBLEM
		2nd		REVISION
	4TH	5TH		REVISION