GOVT.POLYTECHNICMAYURBHANJ LESSONPLAN-2021/22(WINTER)

Discipline: **MEACHANICAL ENGG.**		**Semester:3rdSem**		**Name of theTeachingFaculty:THAKURA HANSDAH**
SUBJECT:STRENGTH OF MATERIAL		**No.of Days/Perweek classallotted:04**	**CHAPTER**	**SemesterFromdate:1.10.2021 ToDate:8.01.2022**
MONTH	**Week**	**DAY**		**TOPIC**
		1st		**1.0 Simple stress& strain** 1.1 Types of load, stresses & strains,(Axial and tangential) Hooke's law, Young's modulus,
	2ND	2nd		bulk modulus, modulus of rigidity, Poisson's ratio, derive the relation between three elastic caonstant
		3rd		x
		4TH	CHAPTER -1	Derive the relation between three elastic constants,
		4TH		1.2 Principle of super position, stresses in composite section
		1st		1.3 Temperature stress, determine the temperature stress in composite bar (single core)
	5TH	2nd		1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
		3rd		1.4 Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
		4TH		Question Discussion
		1st		**Solve of simple problem**
		2nd		Solve of simple problem
	1st	3rd		**2.0 Thin cylinder and spherical shell under internal pressure** 2.1 Definition of hoop and longitudinal stress, strain
		4TH		2.2Derivation of hoop stress, longitudinal stress, hoop strain,longitudinal strain and volumetric strai
			CHAPTE-2	2.2Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strai
		1st		2.3Computation of the change in length, diameter and volume
		2nd		Solve of simple problem
	2ND	3rd		**CLASS TEST-1**
		4TH		Solve of simple problem

		4TH		Solve of simple problem
		5TH		Solve of simple problem
NOVEMBER	3rd	*1st*	chapter-3	**3.0 Two dimensional stress systems** Introduction of Normal stress, Principal plan, shear stress etc
		2nd		3.1 Determination of normal stress, shear stress and resultant stress on oblique plane
		3rd		3.1 Determination of normal stress, shear stress and resultant stress on oblique plane
		4TH		3.2 Location of principal plane and computation of principal stress
	4th	*1st*		3.3 Location of principal plane and computation of principal stress andMaximum shear stress using Mohr's circle
		2nd		3.3 Location of principal plane and computation of principal stress andMaximum shear stress using Mohr's circle
		3rd		Question Discussion
		4TH		Solve of simple problem.
	5th	*1st*		**4.0 Bending moment& shear force** 4.1 Types of beam and load
		2nd		4.2 Concepts of Shear force and bending moment of cantilevern beam with ponted load
		3rd		4.2 Concepts of Shear force and bending moment of
		4TH		cantilevern beam UDL
	1st	*1st*		Shear Force and Bending moment diagram and its salient features illustration in , simply supported beam under point load .
		2nd		Shear Force and Bending moment diagram and its salient features illustration in , simply supported beam under UDL
		3rd	CHAPTER-4	Solve numerical problem cantilever .simply supported and over hanging beam
		4TH		**INTERNAL EXAMINATION**
	2ND	*1st*		Solve numerical problem cantilever .simply supported and over hanging beam
		2nd		Solve numerical problem cantilever .simply supported and over hanging beam
		3rd		Solve numerical problem cantilever .simply supported and over hanging beam

DECEMBER		4TH		Solve numerical problem cantilever .simply supported and over hanging beam
	3rd	*1st*	chapter-5	**5.0 Theory of simple bending.** 5.1 Assumptions in the theory of bending,
		2nd		5.2 Bending equation, Moment of resistance, Section modulus& neutral axis.
		3rd		5.2 Bending equation, Moment of resistance, Section modulus& neutral axis.
		4TH		5.3 Solve simple problems.
	4th	*1st*		5.3 Solve simple problems.
		2nd	CHAPER-6	**6.0 Combined direct & bending stresses** 6.1 Define column Axial load, Eccentric load on column,
		3rd		6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on above
		4TH		6.3 Direct stresses, Bending stresses, Maximum& Minimum stresses. Numerical problems on abo
JANUARY	1st	*1st*		6.4 Buckling load computation using Euler's formula (no derivation) inColumns with various end conditions
	2ND	*1st*	chapter-7	**7.0 Torsion** **7.1 Assumption of pure torsion** **7.2 The torsion equation for solid shaft**
		2nd		7.1 The torsion equation for hollow circular shaft
		3rd		7.2 Comparison between solid and hollow shaft subjected to pure torsion and solvr the numerical problem on above.
		4TH		**CLASS TEST-2**