GOVT. POLYTECHNIC BOLANGIR LESSON PLAN		
Discipline : Mechanical	Semester:3rd	Name of the Teaching Faculty : Manabhanjan Bhoi
Subject :SOM	No. of Days / per week class allotted : 4	Semester From date : 01.07.2024 to Date :08.11.2024 No. of Weesks : 18
Week	Class Day	Topics
Dt. 01.07.2024 to Dt.06.07.2024	1st	Types of load, stresses & strains
	2nd	strains,(Axial and tangential) Hooke's law
	3rd	Young's modulus,bulk modulus
	4th	modulus of rigidity, Poisson's ratio
Dt. 08.07.2024 to Dt.13.07.2024	1st	derive the relation between three elastic constants
	2nd	derive the relation between three elastic constants
	3rd	Principle of super position
	4th	stresses in composite section
Dt. 15.07.2024 to Dt.20.07.2024	1st	Temperature stress
	2nd	determine the temperature stress in composite bar (single core)
	3rd	Strain energy and resilience
	4th	Stress due to gradually applied, suddenly applied and impact load
Dt. 22.07.2024 to Dt.27.07.2024	1st	Simple problems on above
	2nd	Simple problems on above
	3rd	Definition of hoop stress, strain
	4th	Definition of longitudinal stress, strain
Dt. 29.07.2024 to Dt.03.08.2024	1st	Derivation of hoop stress, longitudinal stress
	2nd	Derivation hoop strain, longitudinal strain
	3rd	Derivation of volumetric strain
	4th	Computation of the change in length, diameter and volume
Dt. 05.08.2024 to Dt.10.08.2024	1st	Simple problems on above
	2nd	Simple problems on above
	3rd	Determination of normal stress
	4th	Determination of normal stress
Dt. 12.08.2024 to Dt.17.08.2024	1st	shear stress and resultant stress on oblique plane
	2nd	shear stress and resultant stress on oblique plane
	3rd	Location of principal plane
	4th	Computation of principal stress
Dt. 19.08.2024 to Dt.24.08.2024	1st	Mohr's circle introduction
	2nd	Maximum shear stress using Mohr's circle
	3rd	Types of beam
	4th	Types of loading on beam
Dt. 26.08.2024 to Dt.31.08.2024	1st	Concepts of Shear force and bending moment
	2nd	Shear Force and Bending moment diagram introduction
	3rd	SFD illustration in cantilever beam
	4th	BMD illustration in cantilever beam
Dt. 02.09.2024 to Dt.07.09.2024	1st	SFD illustration in simply supported beam under point load
	2nd	BMD illustration in simply supported beam under point load
	3rd	SFD illustration in simply supported beam under uniformly distributed load
	4th	BMD illustration in simply supported beam under uniformly distributed load

Dt. 09.09.2024 to Dt.14.09.2024	1st	SFD illustration in simply supported beam under point load
	2nd	BMD illustration in simply supported beam under point load
	3rd	SFD illustration in simply supported beam under uniformly distributed load
	4th	BMD illustration in simply supported beam under uniformly distributed load
Dt. 16.09.2024 to Dt.21.09.2024	1st	Assumptions in the theory of bending,
	2nd	Bending equation
	3rd	Moment of resistance
	4th	Section modulus& neutral axis
Dt. 23.09.2024 to Dt.28.09.2024	1st	Solve simple problems using bending equation
	2nd	Solve simple problems using bending equation
	3rd	Define column
	4th	Axial load, Eccentric load on column
Dt. 30.09.2024 to Dt.05.10.2024	1st	Direct stresses, Bending stresses in column
	2nd	Combined stresses in column
	3rd	Maximum& Minimum stresses in the column
	4th	Numerical problems on above
Dt. 14.10.2024 to Dt.19.10.2024	1st	Numerical problems on above
	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	Assumption of pure torsion
Dt. 21.10.2024 to Dt.26.10.2024	1st	The torsion equation for solid circular shaft
	2nd	The torsion equation for hollow circular shaft
	3rd	Comparison between solid and hollow shaft subjected to pure torsion
	4th	Numericals on torsion
Dt. 28.10.2024 to Dt.02.11.2024	1st	Revision
	2nd	Revision
	3rd	Q & A Discussion
	4th	Q & A Discussion
Dt. 04.11.2024 to Dt.08.11.2024	1st	Doubt clearing
	2nd	Doubt clearing
	3rd	Q & A discussion
	4th	Doubt clearing

27/09/24

Signature of
Concerned Faculty

27.09.24

HOD(I/c)