GOVERNMENT CO ED POLYTECHNIC RAIPUR

DEPARTMENT OF CIVIL

Teachers Diary

SESSION- JAN-JULY 2024

SESSION START AS PER UNIVERSITY CALANDER : 20/01/2025 but 3 rd sem exam ended on 22/01/25 so session started on 03/02/25

COURSE NAME- STRENGTH OF MATERIALS

NAME OF SUBJECT TEACHER-Mr.Pankaj Golchha

lecture plan-4hr/week

course code-2020472(020)

Unit No.	Topic	Topic to be covered	No. of periods planned	Total Hours	Actual No of periods taken	Date of Class Conduction	Remarks if any
1	Simple Stresses and Strain	Mechanical Properties of material - Strength Elasticity, Plasticity, Ductility, Brittleness, Malleability, Toughness, Hardness and Rigidity & stiffness, Direct Stresse,Strain, Hook's Law.	1	12	01	05/02/25	PDF shared
		Stress Strain Curve of mild steel . Modulus of elasticity . Yield stress, breaking stress , working stress & ultimate stress and factor	1		01	05/02/25	—Do—
		principle of superposition , stresses in bars of different section , Stresses in composite bars P-45	2		02	05/2/25	—Do—
		Lateral Strain and Poisson's Ration, volumetric strain due to Uni Axial , bixial and triaxial force and change in volume.	3		01 02 02	10/2/25 12/2/25 12/2/25	—Do—
		Shear Stress, Principle of Shear Stress, Shear Modulus, Bulk Modulus and relation among C, Eand K	3		02	19/2/25	—Do—
		Strain Energy, Resiliance, Proof resiliance , modulus of Resilience.	2		01	6/3/25	—Do—

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		Types Of Beam- Cantilever, simply Supported , Fixed , Overhanging, Continuous beam	1		01	19/2/25	—Do—
		types of loading- point load, uniformly distributed load ,UVL ,Reaction	1		01	19/2/25	—Do—
		concept of shear force and bending moment, sign convention	1		01	22/2/25	—Do—
		Relation Between Bending Moment , Shear force and rate of loading	1		01	22/2/25	—Do—
2	Shear Force and Bending Moment	Shear Force and Bending moment diagrams for simply supported beam, Simply supported beams with overhang and cantilever subjected to point loads, UDL, Point of Contraflexure.	7	13	04 03 02	27/1/25 01/3/25 05/3/25	—DO—
		Load and bending moment diagram from shear force diagram	2		02 ~~01~~	05/3/25 ~~06/3/25~~	—DO—
		Concept of pure bending , theory of simple bending , assumption in theory of bending , neutral axis	1		01	06/3/25	—Do—
	Bending Stresses in Beams	Bending Stresses and their Nature, Bending Stress Distribution Diagram	1		01	12/3/25	—Do—
		Moment of Resistance	2		02	12/3/25	—Do—
		Application of theory of bending to symetrical and unsymmterical sections	1		01	12/3/25	—Do—

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3	Shear Stresses in Beams	Shear stress equation, meaning of terms in the equations, shear stress distribution for Rectangular, hollow rectangular, circular section and hollow circular sections, I section, T section, channel section, diamond section, triangular section	7	13	02 02 02	19/3/25 22/3/25 26/3/25
		Relation Between Maximum shear stress and average shear stress for rectangular section, Circular section, Triangular Section	1		01	29/3/25
4	Compound Stresses	Stresses on inclined plane with different stress conditions	1	13	01	29/3/25
		principal planes and principal stresses, analytical method and graphical method and graphical method using mohr's stress circle method.	6		02 02 01 01	02/04/25 05/04/25 07/04/25 16/4/25
	Slope and Deflection	slope and deflection and their interrelation, macaulay's method for determination slope and deflection, maximum values slope and deflection for UDL and point loads for SS cantilever and Fixed Beams	6		01 02 02 01	16/4/25 16/4/25 15/4/25 23/4/25
5	Fixed Beam	Concept, advantages and drawbacks, computation of fixed end	2	13	01+01	23/4/25
		Drawing of B.M. diagrams indicating the max. +ve and -ve values	5		01 02 01 01	23/4/25 26/4/25 28/4/25 30/4/25
		columns and strut, short and long column. End conditions of col. And effective length of col., mode of failure in col.	2		01 01	30/4/25 30/4/25

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	Column	...ness ratio, euler's crippling load formula	3		01 01	30/4/25 02/05/25	
		Rankine's Formula for col.	1		01 01	03/05/25 03/05/25	
	Total Load		64	64	64		

Total class Required = 64

Total class conducted = 64

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