

GOVERNMENT CO.ED POLYTECHNIC RAIPUR (C.G)

DEPARTMENT OF CIVIL ENGINEERING

Teachers Diary

Session:

Session start as per university calendar:

Course Name: STRUCTURAL DESIGN AND DRAFTING-II

Name of Subject Teacher: Mr. Pankaj Golchha

Lecturer plan = 4 Hr/week

Course code: 2020672(020)

S.No.	Topics	Sub Topic to be covered under this unit	Total hours	No. of periods planned	Actual No of periods taken	Date of Class Conduction	Remarks if any
1	Unit-1 Introduction to IS: 800– 2007,Working Stress Method and Plastic Analysis	1.1 Introduction to IS: 800 – 2007 1.1.1 Structural steel and properties of structural steel 1.1.2 Standard structural steel sections 1.1.3 Permissible stresses in structural steel 1.2 Limit state design 1.2.1 Limit state of strength 1.2.2 Limit state of serviceability. 1.2.3 Action (loads) 1.2.4 Design strength 1.2.5 Partial safety factor for materials 1.2.6 Loads, Load combination and partial safety factors for loads. 1.2.7 Maximum effective slenderness ratio	9	2			
		1.3 Introduction to Working Stress Method 1.3.1 General design requirements of Working Stress Method 1.3.2 Permissible stresses as per section 11 of IS800-2007 1.4 Introduction to plastic Analysis 1.4.1 Assumptions in plastic analysis. 1.4.2 Plastic moment, shape factor for different common sections, load factor, concept of plastic hinge		2			
				2			

	1.4.3 Principle of virtual work and calculation of collapse moment for simple beams (simple numerical problems.)	3			
2	Design of bolted and 2.1.1 Types of bolts 2.1.2 Definition of general terms related to bolting, Permissible stresses in bolts 2.1.3 Types of bolted joints 2.1.4 Specifications as per IS 800-2007 2.1.5 Failure of bolted joints, strength and efficiency of bolted joint. 2.1.6 Design of Bolted Connections (only axially loaded members)	9	3		
	Design of Welded Connections 2.2.1Types of welded joints 2.2.2 Types of welds 2.2.3 Strength of welded joint 2.2.4 Design of welded joints		1		
	Design of Tension 3.1.1 Types of tension members 3.1.2 Sections used as tension members 3.1.3 Net sectional area, effective net area 3.1.4 Slenderness Ratio 3.1.5 Types of failures 3.1.6 Design of axially loaded tension members		2		
			3		

3	<p>3.2.1 Standard sections used as compression member</p> <p>3.2.2 Effective length and slenderness ratio</p> <p>3.2.3 Design compressive stress and strength</p> <p>3.2.4 Find design strength of strut</p> <p>3.2.5 Design of strut</p> <p>3.2.6 Design of simple columns and built up columns</p> <p>3.2.7 Design of lacings</p> <p>3.2.8 Design of battens</p>	13	<table border="1"> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> </table>	1				1				2				2				2			
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4	<p>Design of Column Bases</p> <p>4.1 Design of column base</p> <p>4.1.1 Types of column bases Slab base and gusseted base</p> <p>4.1.2 Design of M.S. Slab base with concrete pedestal</p> <p>4.1.3 Cleat angles, their use only</p> <p>4.1.4 Sketch of gusseted base</p> <p>Design of Beams</p> <p>4.2.1 Types of beams</p> <p>4.2.2 Common sections used as beams</p> <p>4.2.3 laterally supported and laterally unsupported beams</p> <p>4.2.3 Web buckling and web crippling</p> <p>4.2.4 Design of laterally supported beams for flexure, shear and deflection</p> <p>4.2.5 Design of built up beams (plated beams)</p>	10	<table border="1"> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> </table>	3				1				3				3							
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		5.1 Types of Trusses					
		5.2 Definitions of terms related to truss					
		5.3 Combination of loads for design of truss					
		5.4 Selection of truss					
		5.5 Forces in the member					
5	Roof trusses	5.6 Design of members of truss		10	2		
		5.7 Design of purlin			2		
		5.8 Detailing of different roof joints and purlin connection			2		
		TOTAL		51	51		