

# GOVERNMENT POLYTECHNIC, SAMBALPUR (RENGALI)


NAME OF THE FACULTY: Smt. Shushree Sangita Patel ( lecturer ), Civil Engineering


LESSON PLAN OF TH-2 STRUCTURAL DESIGN II FOR 5TH SEM, CIVIL ENGG, WINTER 2022 W.E.F. 15.09.2022

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
W-1	15.09.22 TO 17.09.22	<b>1.0 Introduction:</b> 1.1 Common steel structures, Advantages & disadvantages of steel structures. 1.2 Types of steel, properties of structural steel. 1.3 Rolled steel sections, special considerations in steel design. 1.4 Loads and load combinations.	5	3
W-2	19.09.22 TO 23.09.22	1.5 Structural analysis and design philosophy. 1.6 Brief review of Principles of Limit State design.		2
W-3	26.09.22 TO 01.10.22	<b>2.0 Structural Steel Fasteners and Connections.</b> 2.1 Bolted Connections. 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections. 2.1.2 Different terminology, spacing and edge distance of bolt holes. 2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design. 2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity & bearing capacity), reduction factors, and shear capacity of HSFG bolts.	10	4
W-4	10.10.22 TO 15.10.22	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces) 2.1.7 Efficiency of a joint. 2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection. 2.2.2 Types of welded joints and specifications for welding. 2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints.		4
W-5	17.10.22 TO 22.10.22	<b>3.0 Design of Steel tension Members</b> 3.1 Common shapes of tension members.		4
W-6	25.10.22 TO 29.10.22	3.2 Maximum values of effective slenderness ratio. 3.3 Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)	10	4
W-7	31.10.22 TO 05.11.22			2
W-8	07.11.22 TO 12.11.22	<b>4.0 Design of Steel Compression members.</b> 4.1 Common shapes of compression members. 4.2 Bulking class of cross sections and slenderness ratio.	10	4
W-9	14.11.22 TO 19.11.22	4.3 Design compressive stress and strength of compression members. 4.4 Analysis and Design of compression members (axial load only).		4



W-10	21.11.22 TO 26.11.22	5.0 Design of Steel beams: 5.1 Common cross sections and their classification. 5.2 Deflection limits, web buckling and web crippling. Design of laterally supported beams against bending and shear. 5.3	10	4
W-11	28.11.22 TO 03.12.22			4
W-12	05.12.22 TO 10.12.22			2
W-13	12.12.22 TO 17.12.22	6.0 Design of Tubular Steel structures: 6.1 Round tubular sections, permissible stresses. 6.2 Tubular Compression & Tension Members 6.3 Joints in tubular trusses	6	2
W-14	19.12.22 TO 22.12.22	7.0 Design of Masonry Structures: 7.1 Design consideration for masonry walls & Columns Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness	9	4+2 EXTRA CLASS
	23.12.22 Onwards			3 EXTRA CLASS
		REVISION	—	—

  
 Signature of Concerned Faculty

  
 C/S Signature of Senior Lect./ HOD (f/c)