

GOVERNMENT POLYTECHNIC, SAMBALPUR (RENGALI)
NAME OF THE FACULTY: MISS PINKY SAHU (PTGF), Civil Engineering
LESSON PLAN OF RAILWAY & BRIDGE ENGINEERING FOR 5TH SEM,
CIVIL ENGG, WINTER -2023 W.E.F. 12.08.2023

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
W-1	01.08.23 TO 05.08.23	1.1 Railway terminology 1.2 Advantages of railways 1.3 Classification of Indian Railways	2	3
		2. Permanent way 2.1 Definition and components of a permanent way 2.2 Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions	5	1
W-2	07.08.23 TO 12.08.23			4
W-3	14.08.23 TO 19.08.23	3. Track materials 3.1 Rails 3.1.1 Functions and requirement of rails 3.1.2 Types of rail sections, length of rails 3.1.3 Rail joints – types, requirement of an ideal joint	2	3
		3.1.4 Purpose of welding of rails & its advantages 3.1.5 Creep- definition, cause & prevention		4
W-4	21.08.23 TO 26.08.23	3.2 Sleepers 3.2.1 Definition, function & requirements of sleepers 3.2.2 Classification of sleepers 3.2.3 Advantages & disadvantages of different types of sleepers	10	4
		3.3 Ballast 3.3.1 Functions & requirements of ballast 3.3.2 Materials for ballast 3.4 Fixtures for Broad gauge 3.4.1 Connection of rails to rail-fishplate, fish bolts 3.4.2 Connection of rails to sleepers		2
W-5	28.08.23 TO 02.09.23	4. Geometric for broad gauge 4.1 Typical cross – sections of single & double broad		2

W-6	04.09.23 TO 09.09.23	gauge railway track in cutting and embankment 4.2 Permanent & temporary land width 4.3 Gradients for drainage 4.4 Super elevation – necessity & limiting valued	10	4
W-7	11.09.23 TO 16.09.23			4
W-8	18.09.23 TO 23.09.23	5. Points and crossings 5.1 Definition, necessity of Points and crossings 5.2 Types of points & crossings with tie diagrams	4	4
W-9	25.09.23 TO 30.09.23	6. Laying & maintenance of track 6.1 Methods of Laying & maintenance of track 6.2 Duties of a permanent way inspector 4.4 Super elevation – necessity & limiting valued	4 10	4
W-7	11.09.23 TO 16.09.23	Section – B: BRIDGES 1. Introduction to bridges 1.1 Definitions 1.2 Components of a bridge 1.3 Classification of bridges 1.4 Requirements of an ideal bridge	2	4 2
W-10	03.10.23 TO 07.10.23	5.1 Definition, necessity of Points and crossings 5.2 Types of points & crossings with tie diagrams 2. Bridge site investigation, hydrology & planning 2.1 Selection of bridge site, Alignment, 2.2 Determination of Flood Discharge 2.3 Waterway & economic span 2.4 Afflux, clearance & free board	4 5	4 2
W-8	18.09.23 TO 23.09.23			
W-9	25.09.23 TO 30.09.23			3
W-11	09.10.23 TO 14.10.23	Section – B: BRIDGES 3. Bridge foundation 3.1 Scour depth minimum depth of foundation 3.2 Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caisson foundation 3.3 Cofferdams	8	1+2 EXTRA CLASS
W-10	03.10.23 TO 07.10.23			4+1 EC
W-12	16.10.23 TO 20.10.23			
W-13	30.10.23 TO 04.11.23	4. Bridge substructure and approaches 4.1 Types of piers 4.2 Types of abutments 4.3 Types of wing walls 4.4 Approaches	5	4
W-11	09.10.23 TO 14.10.23			1
W-14	06.11.23 TO 14.11.23			
		3. Bridge foundation 3.1 Scour depth minimum depth of foundation 3.2 Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caisson foundation 3.3 Cofferdams	8	1+2 EXTRA CLASS
	16.10.23			4+1 EC

	11.11.23	5. Culvert & Cause ways	5	2
W-15	13.11.23 TO 18.11.23	5.1 Types of culvers – brief description 5.2 Types of causeways – brief description		3
W-16	20.11.23 TO 25.11.23 & ONWARDS	REVISION DISCUSSION	–	–

SIGNATURE OF SUBJECT TEACHER
CIVIL ENGG DEPT

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G.P. SBP (Rt. II)

C/S BY PRINCIPAL
G.P. SAMBALPUR