



GANDHI SCHOOL OF ENGINEERING

BHABANDHA, BERHAMPUR

BRANCH- CIVIL ENGINEERING

SEMESTER- 5TH

SUBJECT- Th3. RAILWAY & BRIDGE ENGINEERING


NAME OF THE FACULTY- ER.SRIDHRA SAHU

		Topic to be taken			Actual topic taken			
Sl. No	Topic/ Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks
Section – A: RAILWAYS								
1	Introduction	2	1.1 Railway terminology 1.2 Advantages of railways 1.3 Classification of Indian Railways	15/09/2022 - 19/09/2022	1.1 1.2 1.3	Railway terminology Advantages of railways Classification of Indian Railways	15.09.2022 19.09.2022	
2	Permanent way	5	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	21/09/2022 - 27/09/2022	2.1 2.2	Definition and components of a permanent way Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions	21.09.2022 22.09.2022 23.09.2022 27.10.2022 28.09.2022	

3	Track materials	10	3.1 Rails	28/09/2022 - 17/10/2022	3.1	3.1 Rails		
			3.1.1 Functions and requirement of rails		3.1.1	Functions and requirement of rails		29.09.2022
			3.1.2 Types of rail sections, length of rails		3.1.2	Types of rail sections, length of rails		12.10.2022
			3.1.3 Rail joints – types, requirement of an ideal joint		3.1.3	Rail joints – types, requirement of an ideal joint		
			3.1.4 Purpose of welding of rails & its advantages		3.1.4	Purpose of welding of rails & its advantages		13.10.2022
			3.1.5 Creep- definition, cause & prevention		3.1.5	Creep- definition, cause & prevention		14.10.2022
			3.2 Sleepers		3.2	Sleepers		17.10.2022
			3.2.1 Definition, function & requirements of sleepers		3.2.1	Definition, function & requirements of sleepers		
			3.2.2 Classification of sleepers		3.2.2	Classification of sleepers		
			3.2.3 Advantages & disadvantages of different types of sleepers		3.2.3	Advantages & disadvantages of different types of sleepers		19.10.2022
			3.3 Ballast		3.3	Ballast		20.10.2022
			3.3.1 Functions & requirements of ballast		3.3.1	Functions & requirements of ballast		
			3.3.2 Materials for ballast		3.3.2	Materials for ballast		
			3.4 Fixtures for Broad gauge		3.4	Fixtures for Broad gauge		
3.4.1 Connection of rails to rail-fishplate, fish bolts	3.4.1	Connection of rails to rail-fishplate, fish bolts						
3.4.2 Connection of rails to sleepers	3.4.2	Connection of rails to sleepers						
4	Geometric for broad gauge	10	4.1 Typical cross – sections of single & double broad gauge railway track in cutting and embankment	19/10/2022 - 31/10/2022	4.1	4.1 Typical cross – sections of single & double broad gauge railway track in cutting and embankment	21.10.2022	
			4.2 Permanent & temporary land width		4.2	4.2 Permanent & temporary land width	26.10.2022	
			4.3 Gradients for drainage		4.3	4.3 Gradients for drainage	27.10.2022	
			4.4 Super elevation – necessity & limiting valued		4.4	4.4 Super elevation – necessity & limiting valued	28.10.2022	
					4.3	4.3 Gradients for drainage	02.11.2022	
					4.4	4.4 Super elevation – necessity & limiting valued	03.11.2022	
							04.11.2022	
							09.11.2022	
			10.11.2022					

5	Points and crossings	4	5.1 Definition, necessity of Points and crossings 5.2 Types of points & crossings with tie diagrams	02/11/2022 - 07/11/2022	5.1 5.2	Definition, necessity of Points and crossings Types of points & crossings with tie diagrams	11.11.2022 14.11.2022 17.11.2022 18.11.2022	
6	Laying & maintenance of track	4	6.1 Methods of Laying & maintenance of track 6.2 Duties of a permanent way inspector	09/11/2022 - 14/11/2022	6.1 6.2	Methods of Laying & maintenance of track Duties of a permanent way inspector	21.11.2022 22.11.2022 23.11.2022 24.11.2022	
Section – B: BRIDGES								
1	Introduction to bridges	2	1.1 Definitions 1.2 Components of a bridge 1.3 Classification of bridges 1.4 Requirements of an ideal bridge	17/11/2022 - 18/11/2022	1.1 1.2 1.3 1.4	Definitions Components of a bridge Classification of bridges Requirements of an ideal bridge	25.11.2022 02.12.2022	
2	Bridge site investigation, hydrology & planning	5	2.1 Selection of bridge site, Alignment, 2.2 Determination of Flood Discharge 2.3 Waterway & economic span 2.4 Afflux, clearance & free board	21/11/2022 - 28/11/2022	2.1 2.2 2.3 2.4	Selection of bridge site, Alignment, Determination of Flood Discharge Waterway & economic span Afflux, clearance & free board	03.12.2022 04.12.2022 05.12.2022	
3	Bridge foundation	8	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	30/11/2022 - 08/12/2022	3.1 3.2 3.3	Scour depth minimum depth of foundation Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caisson foundation Cofferdams	06.12.2022 09.12.2022 12.12.2022 14.12.2022 15.12.2022	

4	Bridge substructure and approaches	5	4.1 Types of piers 4.2 Types of abutments 4.3 Types of wing walls 4.4 Approaches	09/12/2022 - 15/12/2022	4.1 Types of piers 4.2 Types of abutments 4.3 Types of wing walls 4.4 Approaches	16.12.2022 21.12.2022 22.12.2022 23.12.2022	
5	Culvert & Cause Ways	5	5.1 Types of culvers – brief description 5.2 Types of causeways – brief description	17/12/2022 - 22/12/2022	5.1 Types of culvers – brief description 5.2 Types of causeways – brief description	02.01.2023 04.01.2023 05.01.2023 06.01.2023	


 Signature and Stamp of HOD:
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