

LESSON PLAN FOR RAILWAY & BRIDGE ENGINEERING FOR 5TH SEM ,CIVIL
ENGG,WINTER -2024
W.E.F. 01.07.2024
Faculty Name- Bijayalaxmi Sahoo

WEEK NO.	TOPIC	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
W-1	Section – A: RAILWAYS 1. Introduction 1.1 Railway terminology 1.2 Advantages of railways 1.3 Classification of Indian Railways	2	4
	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	
W-2			4
W-3	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 3.1.4 Purpose of welding of rails & its advantages 3.1.5 Creep- definition, cause & prevention 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 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	10	4
W-4			4
W-5			4
W-6	4. Geometric for broad gauge 4.1 Typical cross – sections of single & double broad 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			4
W-8	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	6. Laying & maintenance of track 6.1 Methods of Laying & maintenance of track 6.2 Duties of a permanent way inspector	4	4

W-10	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. 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	5	4
W-11	3. Bridge foundation 3.1 Scour depth minimum depth of foundation 3.2 Types of bridge foundations – spread foundation, pile foundation- well	8	4
W-12	foundation – sinking of wells, caisson foundation 3.3 Cofferdams		4
W-13	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-14	5. Culvert & Cause ways 5.1 Types of culvers – brief description 5.2 Types of causeways – brief description	5	4
W-15	REVISION	–	4

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16/08/24

Faculty Signature

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