

LESSON PLAN

Discipline: Civil Engg.	Semester: Fifth (5 th)	Name of the Faculty: Er Malaya Ranjan Sahu
Subject: Railway & Bridge Engg	No. of days per week class allotted: Four (4)	Semester from Date: 15.09.22 to Date: 22.12.22 No. of Weeks: 15
WEEK	CLASS DAY	THEORY TOPICS
1 st	1 st	Railway terminology
	2 nd	Advantages of railways
	3 rd	Classification of Indian Railways
		Review class
	4 th	Definition, components of a permanent way
2 nd	1 st	Concept of gauge
	2 nd	different gauges prevalent in India
	3 rd	suitability of these gauges under different conditions
	4 th	Review Class
3 rd	1 st	Rails , Functions and requirement of rails
	2 nd	Types of rail sections, length of rails
	3 rd	Rail joints – types, requirement of an ideal joint
	4 th	Monthly test
4 th	1 st	Purpose of welding of rails & its advantages
	2 nd	Creep definition, cause & prevention
	3 rd	Sleepers Definition, function & requirements of sleepers
	4 th	Classification of sleepers
5 th	1 st	Advantages & disadvantages of different types of sleepers

	2 nd	Ballast: Functions & requirements of ballast
	3 rd	Materials for ballast
	4 th	Fixtures for Broad gauge
6 th	1 st	Connection of rails to rail-fishplate, fish bolts
	2 nd	Connection of rails to sleepers , Review class
	3 rd	Typical cross- sections of single broad gauge
	4 th	Typical cross – sections of double broad railway track in cutting
7 th	1 st	Typical cross – sections of single broad gauge double broad railway track in cutting and embankment
	2 nd	Permanent & temporary land width
	3 rd	Gradients for drainage
	4 th	Super elevation – necessity
8 th	1 st	Monthly test
	2 nd	Super elevation –limiting valued
		Review class
	3 rd	Definition, Necessity of Points
	4 th	Necessity of crossings
9 th	1 st	Types of points with tie diagrams
	2 nd	Types of crossings with tie diagrams
		Review class
	3 rd	Methods of Laying of track
	4 th	Methods of maintenance of track
10 th	1 st	Duties of a permanent way inspector
	2 nd	Duties of a permanent way inspector

		Review class
	3 rd	Monthly test
	4 th	Definitions , Components of a bridge
11 th	1 st	Classification of bridges
	2 nd	Requirements of an ideal bridge
		Review class
	3 rd	Selection of bridge site
	4 th	Alignments , Determination of flood discharge
12 th	1 st	Waterway & economic span
	2 nd	Afflux, clearance & free board
	3 rd	Review class
	4 th	Scour depth minimum depth of foundation
13 th	1 st	Types of bridge, foundations
	2 nd	Spread foundation
	3 rd	pile foundation- pile driving
	4 th	well foundation – sinking of wells
14 th	1 st	Caission foundation
	2 nd	Coffer dams, Review class
	3 rd	Types of piers, Types of abutments
	4 th	Types of wing walls , Approaches
15 th	1 st	Review class
	2 nd	Monthly test
	3 rd	Types of culvers - brief description
	4 th	Types of causeways- brief description, Review class

