

# LESSON PLAN OF 5<sup>TH</sup> SEMESTER CIVIL ENGINEERING

Discipline :-CIVIL	Semester:-5 <sup>TH</sup>	Name of the Teaching Faculty Sophia Pradhan
Subject:- Railway and bridge engg.	No of Days/per Week Class Allotted :- 04	Semester From:- <b>15 /09/ 2022</b> To:- <b>22/12/2022</b> No of Weeks:- <b>15</b>
Week	Class Day	Theory/ Practical Topics
1 <sup>st</sup>	1 <sup>st</sup>	Introduction : Railway terminology
	2 <sup>nd</sup>	Advantages of railways ,Classification of Indian Railways
	3 <sup>rd</sup>	Permanent way , Definition
	4 <sup>th</sup>	components of a permanent way
2 <sup>nd</sup>	1 <sup>st</sup>	Concept of gauge
	2 <sup>nd</sup>	different gauges prevalent in India
	3 <sup>rd</sup>	suitability of these gauges under different
	4 <sup>th</sup>	Track materials , Rails, Functions and requirement of rails
3 <sup>rd</sup>	1 <sup>st</sup>	Types of rail sections , length of rails Rail joints – types, requirement of an ideal joint
	2 <sup>nd</sup>	Purpose of welding of rails & its advantages Creep definition, cause & prevention
	3 <sup>rd</sup>	Sleepers , Definition, function & requirements of sleepers Classification of sleepers, Advantages & disadvantages of different types of sleepers
	4 <sup>th</sup>	Ballast ,Functions & requirements of ballast , Materials for ballast
4 <sup>th</sup>	1 <sup>st</sup>	Fixtures for Broad gauge Connection of rails to rail-fishplate, fish bolts Connection of rails to sleepers
	2 <sup>nd</sup>	Geometric for Broad gauge Typical cross – sections of single
	3 <sup>rd</sup>	double broad gauge railway track in cutting
	4 <sup>th</sup>	embankment
5 <sup>th</sup>	1 <sup>st</sup>	Permanent & temporary land width
	2 <sup>nd</sup>	Gradients for drainage
	3 <sup>rd</sup>	Super elevation – necessity & limiting valued
	4 <sup>th</sup>	Numerical problem
6 <sup>th</sup>	1 <sup>st</sup>	Numerical problem
	2 <sup>nd</sup>	Numerical problem
	3 <sup>rd</sup>	Numerical problem
	4 <sup>th</sup>	Points and crossings
7 <sup>th</sup>	1 <sup>st</sup>	Definition,
	2 <sup>nd</sup>	necessity of Points and crossings
	3 <sup>rd</sup>	Types of points
	4 <sup>th</sup>	& types of crossings with tie diagrams

8 <sup>th</sup>	1 <sup>st</sup>	diagrams
	2 <sup>nd</sup>	Laying & maintenance of track
	3 <sup>rd</sup>	Methods of Laying
	4 <sup>th</sup>	maintenance of track
9 <sup>th</sup>	1 <sup>st</sup>	Details of a permanent way inspector
	2 <sup>nd</sup>	Section – B : BRIDGES Introductions 7.1 Definitions Components of a bridge
	3 <sup>rd</sup>	Classification of bridges. Requirements of an ideal bridge
	4 <sup>th</sup>	.Bridge Site investigation, hydrology & planning Selection of bridge site
10 <sup>th</sup>	1 <sup>st</sup>	Bridge alignments
	2 <sup>nd</sup>	Determination of flood discharge
	3 <sup>rd</sup>	Waterway & economic span
	4 <sup>th</sup>	Afflux, clearance & free board Collection of bridge design data & sub surface investigation
11 <sup>th</sup>	1 <sup>st</sup>	Bridge foundation
	2 <sup>nd</sup>	Scour depth minimum depth of foundation Types of bridge
	3 <sup>rd</sup>	pile foundation-, pile driving,
	4 <sup>th</sup>	well foundation – sinking of wells caisson foundation
12 <sup>th</sup>	1 <sup>st</sup>	foundations – spread foundation
	2 <sup>nd</sup>	Coffer dams
	3 <sup>rd</sup>	Bridge substructure and approaches Types of piers
	4 <sup>th</sup>	Types of abutments
13 <sup>th</sup>	1 <sup>st</sup>	Types of wing walls
	2 <sup>nd</sup>	<b>Approaches</b>
	3 <sup>rd</sup>	Permanent bridges Masonry bridges
	4 <sup>th</sup>	<b>Steel bridges – classification with sketches</b>
14 <sup>th</sup>	1 <sup>st</sup>	<b>Steel bridges – classification with sketches</b>
	2 <sup>nd</sup>	Concrete bridges – classification, brief description with sketches
	3 <sup>rd</sup>	IRC bridge loading
	4 <sup>th</sup>	.Culvert & cause ways Types of culvers - brief description
15 <sup>th</sup>	1 <sup>st</sup>	Types of causeways - brief description
	2 <sup>nd</sup>	Types of causeways - brief description
	3 <sup>rd</sup>	PREVIOUS YEAR QUESTION DISCUSSION
	4 <sup>th</sup>	REVISION

