

***LESSON PLAN***

<b>Session</b>	<b>::</b>	Winter – 2022
<b>Course Type</b>	<b>::</b>	Theory
<b>Semester/Branch</b>	<b>::</b>	5 <sup>th</sup> Semester, Civil Engineering
<b>Subject (with code)</b>	<b>::</b>	Railway and Bridge Engineering ( <b>Th.3</b> )
<b>Contact hours/week</b>	<b>::</b>	4 hours
<b>Name of Faculty</b>	<b>::</b>	<b>Abhijeet Prasad Dash</b>

S.N.	Class ID	Course Content	Mode of Delivery
1	1.1	Railway terminology	Lecture
2	1.2	Advantages of railways	Lecture
3	1.3	Classification of Indian Railways	Presentation
4	2.1	Definition and components of a permanent way	Presentation
5	2.2	Concept of gauge, different gauges prevalent in India, suitability of these gauges	Video Content
6	3.1	Rails	Lecture
7	3.2	Functions and requirement of rails	Lecture
8	3.3	Types of rail sections, length of rails	Lecture
9	3.4	Rail joints – types, requirement of an ideal joint	Lecture
10	3.5	Purpose of welding of rails & its advantages	Presentation
11	3.6	Creep- definition, cause & prevention	Video Content
12	3.7	Sleepers	Lecture
13	3.8	Definition, function & requirements of sleepers	Lecture
14	3.9	Classification of sleepers	Lecture
15	3.10	Advantages & disadvantages of different types of sleepers	Presentation
16	3.11	Ballast	Lecture
17	3.12	Functions & requirements of ballast	Lecture
18	3.13	Materials for ballast	Presentation
19	3.15	Fixtures for Broad gauge	Lecture
20	3.16	Connection of rails to rail-fishplate, fish bolts	Presentation
21	3.17	Connection of rails to sleepers	Video Content
22	4.1	Typical cross – sections of single & double broad gauge railway track in cutting and embankment	Lecture
23	4.2	Permanent & temporary land width	Lecture
24	4.3	Gradients for drainage	Lecture
25	4.4	Super elevation – necessity & limiting valued	Presentation

26	4.5	Revision and Practice	Quiz test
27	5.1	Definition, necessity of Points and crossings	Lecture
28	5.2	Types of points & crossings with tie diagrams	Lecture
29	6.1	Methods of Laying & maintenance of track	Presentation
30	6.2	Duties of a permanent way inspector	Lecture
31	7.1	Definitions	Presentation
32	7.2	Components of a bridge	Video Content
33	7.3	Classification of bridges	Lecture
34	7.4	Requirements of an ideal bridge	Lecture
35	8.1	Selection of bridge site, Alignment,	Lecture
36	8.2	Determination of Flood Discharge	Presentation
37	8.3	Waterway & economic span	Lecture
38	8.4	Afflux, clearance & free board	Lecture
39	9.1	Scour depth minimum depth of foundation	Presentation
40	9.2	Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caisson foundation	Lecture
41	9.3	Coffer dams	Presentation
42	10.1	Types of piers	Video Content
43	10.2	Types of abutments	Lecture
44	10.3	Types of wing walls	Lecture
45	10.4	Approaches	Lecture
46	11.1	Types of culvers – brief description	Presentation
47	11.2	Types of causeways – brief description	Lecture
48	11.3	Revision and Practice	Quiz test

Signature of Concern Teacher