

: LESSON PLAN :

Date.....
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Discipline: — Civil Engineering
 Semester: — 5th
 Name of the teaching faculty: — Subhalipsa Pradhan
 Subject: — Railway and Bridge Engineering
 No of days/Week class allotted: — 04
 Semester From: — 01/10/21 - 08/10/22
 No. of Weeks: — 15

Weeks	Class Days	Theory / Practical Topics
27/09/21	1st	
to	2nd	
02/10/21	3rd	
	4th	Railway Terminology.
04/10/21	1st	Advantages & Classification of Indian Railways.
to	2nd	Component & definitions of Permanent way.
09/10/21	3rd	Gauge, types, suitability of gauge.
	4th	Requirement & functions of Permanent way.
11/10/21	1st	↑ Durga Puja festival ↓
to	2nd	
16/10/21	3rd	
	4th	
18/10/21	1st	
to	2nd	Rails, functions & Requirements
23/10/21	3rd	← Kumare Purnima
	4th	Types & length of rail, Rail joint, Ideal rail joint.
25/10/21	1st	Welding of rails, Purpose, creep of R
to	2nd	Cause & Prevention of creep.
30/10/21	3rd	Sleeper functions, Requirements
	4th	Classification, adv & disadvantages of sleepers.

Weeks	Class Days	Theory / Practical Topics
01/11/21 to 06/11/21	1st 2nd 3rd 4th	Ballast, function & Requirements Materials for ballast, Fixtures of BG Connection of rails to fish plate & fish bolts Connection of rails to sleepers.
08/11/21 to 13/11/21	1st 2nd 3rd 4th	Design of BG cross-section, track in cutting Permanent & temporary land width, rail Gradient for drainage, grade compensation Super-elevation, Necessity & limiting values.
15/11/21 to 20/11/21	1st 2nd 3rd 4th	← Last Monday of Kartika → Numericals of super-elevation Design of super elevation with speed limit ← Rabas Purnima →
22/11/21 to 27/11/21	1st 2nd 3rd 4th	Point & Crossing, Necessity & requirement Type of point & crossing with diagram Type of crossing & its diagram
29/11/21 to 04/12/21	1st 2nd 3rd 4th	Laying methods & maintenance of track, lighting facilities. Duties of permanent way inspector. Bridge & Component of bridges.
06/12/21 to 11/12/21	1st 2nd 3rd 4th	Classification & requirements of an ideal bridge Selection of bridge site, Alignment Determination of flood discharge Material & economical span

Weeks	Class Days	Theory / Practical Topics
18/12/21 to 18/12/21	1st 2nd 3rd 4th	Apflux, Clearance & free board. Formula for depth & discharge 'Q', Scour depth & minimum depth of foundation. Type of bridge foundation.
20/12/21 to 25/12/21	1st 2nd 3rd 4th	Sinking of wells, Caisson foundation. Cofferdam, Selection of foundation. Necessity, Function of foundation. Velocity, Retaining structures in bridges.
27/12/21 to 01/01/22	1st 2nd 3rd 4th	Type of piers Type of abutment Type of wing walls Approaches
08/01/22 to 08/01/22	1st 2nd 3rd 4th	Type of culvert, Brief description of culvert Type of causeway Brief description of causeway.