Discipline: Civil Engg	Semester: 5th	Name of the teaching faculty: Ms Geetanjali Bhitrea.
Subject: Railway Engg.	No of day / Per week class allotted = 4	Semester from date 15/9/22 to date 22/1/23 No of week - 60

Week	Class day	Theory.
		Section - A: RAILWAYS
1st	1st	I. Introduction
		1.1 Railway terminology.
	2nd	1.2. Advantages of railways
	3rd	1.3 Classificaton of Indian Railways.
		2. Permanent way
	4th	2.1. Definition and components of a permanent way.
2nd	1st	2.2. Concept of gauge, different gauges prevalent in India, suitablity of these gauges under different conditions.

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		5. Track materials
	2nd	3.1. Rails
	3rd	3.1.1 Functions and requirement of rails
	4th	3.1.2. Types of rail secti length of rails.
3rd	1st	3.1.3. Rail joints- types, requirement of an idea joint.
	2nd	3.1.4 Purpose of weldin of rails & its advantag
	3rd	3.1.5 Creep- definition, causes & prevention.
	4th	3.2. sleepers.
4th	1st	3.2.1. Definition, functio & requirments of sleepers
	2nd	3.2.2. Classification of sleepers.
	3rd	3.2.3 Advantages & disadv antages of different types of sleepers.

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		3.3 Ballast.
	4th	3.3.1 Functions & requirement of ballast.
	1st	3.3.2 Materials for ballast
5th	2nd	3.4 Fixture for Broad gauge.
	3rd	4.4.1 Connection of rail of rail-fishplate, fish bolts.
	4th	4.4.2 Connection of rail to sleepers.
		4. Geometric for broad gauge.
	1st	4.1. Typical cross-sections of single & double broad gauge railway track in cutting and embankment.
6th	2nd	
	3rd	4.2. Permanent & temporary land width.
	4th	4.3. Gradients for drainage.

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	7th	4.4. super elevation- necessity & limiting valued.
7th	2nd &	5. Points and crossings
		5.1. Definition, necessity of Points and crossings
	3rd	5.2. Types of points & crossing with tie diagrams.
		6. Laying & maintenance of track
	4th	6.1. Methods of Laying & maintenance of track
8th	1st	6.2. Duties of a permanent way inspector.
		Section-B: BRIDGES
	2nd	1. Introduction of bridges
		1.1 Definitions.
	3rd	1.2. Components of a bridg
	4th	1.3 Classification of bridg

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	1st	1.4. Requirements of an ideal brige.
9th		2. Bridge site investigation hydrology & planning
	2nd	2.1. Selection of bridge site, Alignment,
	3rd	2.2. Determination of Flood Discharge.
	4th	2.3. Waterway & economic span.
	1st	2.4 Afflux, clearance & free board.
10th		3. Brige foundation
	2nd	3.1. Scour depth minimum depth of foundation.
	3rd	3.2. Types of bridge foundations - spread foundations, pile foundation -
	4th	well foundation sinking of wells caission foundation.

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	1st	3.3. Coffer dams
		4. Bridge substructure and approaches
11th	2nd	4.1. Types of piers.
		4.2. Types of abutmen
	3rd	4.3. Types of wing wal
		4.4. Approaches.
	4th	5. Culvert & Causeway
		5.1 Types of colvers- brief description.
12th	1st	5.2. Types of causeway brief description.
13th	Revision	
14th		
15th		

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