

DISCIPLINE:CIVIL	SEMESTER:5TH	NAME OF THE TEACHING FACULTY: SIMARANI NAYAK
SUBJECT NAME: RAILWAY & BRIDGE ENGG.	No. of Days per Week Class Alloted: 3days	Semester From Date: 01/08/2023 To Date: 30/11/2023 No of Weeks :18
Week	Class Day	Theory Topics
August 1st week	1st week- (1st,2nd day)	Section – A: RAILWAYS 1 Introduction 1.1 Railway terminology 1.2 Advantages of railways 1.3 Classification of Indian Railways
August 1st week 2nd week	1st week(3rd day) week- (1st,2nd,3rd day)	2 Permanent way 2.1 Definition and components of a permanent way 2.2 Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions
August 3rd week 4th week Septmber 1st week	3rd week(1st,2nd,3rd day) 4th week-(1st 2nd 3rd day) Septmber 1st week -(1st 2nd day)	3 Track materials 3.1 Rails 3.1.1 Functions and requirement of rails 3.1.2 Types of rail sections, length of rails 3.1.3 Rail joints – types, requirement of an ideal joint 3.1.4 Purpose of welding of rails & its advantages 3.1.5 Creep- definition, cause & prevention 3.2 Sleepers 3.2.1 Definition, function & requirements of sleepers 3.2.2 Classification of sleepers 3.2.3 Advantages & disadvantages of different types of sleepers 3.3 Ballast 3.3.1 Functions & requirements of ballast 3.3.2 Materials for ballast 3.4 Fixtures for Broad gauge 3.4.1 Connection of rails to rail-fishplate, fish bolts 3.4.2 Connection of rails to sleepers
Septmber 2nd week 3rd week 4th week	2nd week-(1st 2nd, 3rd, day ) 3rd week-(1st ,2nd,3rd, 4th ) 4th week-(1st, 2nd day)	4 Geometric for broad gauge 4.1 Typical cross – sections of single & double broad gauge railway track in cutting and embankment 4.2 Permanent & temporary land width 4.3 Gradients for drainage 4.4 Super elevation – necessity & limiting valued
October 1st week	1st week -(1st 2nd 3rd day)	5 Points and crossings 5.1 Definition, necessity of Points and crossings 5.2 Types of points & crossings with tie diagrams

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October week	2nd	2nd week- (1st,2nd,3rd day)	6 Laying & maintenance of track 6.1 Methods of Laying & maintenance of track 6.2 Duties of a permanent way inspecto
October week	3rd	3rd week-(1st,2nd day)	Section – B: BRIDGES 1 Introduction to bridges 1.1 Definitions 1.2 Components of a bridge 1.3 Classification of bridges 1.4 Requirements of an ideal bridge
November 1st week		1st week- (1st,2nd 3rd day)	2 Bridge site investigation, hydrology & planning 2.1 Selection of bridge site, Alignment, 2.2 Determination of Flood Discharge 2.3 Waterway & economic span 2.4 Afflux, clearance & free board
November week 3rd week	2nd 3rd	2nd week(1st,2nd,3rd) week(1st,2nd,3rd)	3 Bridge foundation 3.1 Scour depth minimum depth of foundation 3.2 Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caission foundation 3.3 Coffor dams
November week	4th	4th week- ( 1st ,2nd)	4 Bridge substructure and approaches 4.1 Types of piers 4.2 Types of abutments 4.3 Types of wing walls 4.4 Approaches
November week	4th	5th week- (3rd day)	5 Culvert & Cause ways 5.1 Types of culvers – brief description 5.2 Types of causeways – brief description

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