



UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: Civil Engineering	SEMESTER: 5 th Sem	NAME OF THE TEACHING FACULTY: ER. TEJASWINI DAS		
SUBJECT: Railway And Bridge Engineering	No of Days/ Per week class allotted: 4 Class P/W -60	Semester From Date: 15/09/2022 To Date: 22/12/2022 No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS <u>SECTION-A</u>	REMARKS	
1 st	1 st	Introduction :Railway terminology	Date	Dean/Principal
	2 nd	Advantages of railways & Classification of Indian Railways,		
	3 rd	Permanent way : Definition and components of a permanent way.		
	4 th	Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions.		
	1 st	Track materials :Rails & Functions and requirement of rails		
	2 nd	Types of rail sections, length of rails.		
	3 rd	Rail joints – types, requirement of an ideal joint.		

2 nd	4 th	Purpose of welding of rails & its advantages and Creep-definition, cause & prevention		
3 rd	1 st	Sleepers and Definition, function & requirements of sleepers.		
	2 nd	Classification of sleepers and Advantages & disadvantages of different types of sleepers		
	3 rd	Ballast and Functions & requirements of ballast.		
	4 th	Materials for ballast and Fixtures for Broad gauge.		
	1 st	Connection of rails to rail-fishplate, fish bolts and Connection of rails to sleepers		
	2 nd	Revision of last class About Material and Connection of rail.		

4 th	3 rd	Geometric for broad gauge: Typical cross – sections of single & double broad gauge railway track in cutting and embankment Permanent & temporary land width.		
	4 th	Giving Assignment Questions and Doubt Clearing Class.		
5 th	1 st	Gradients for drainage		
	2 nd	Super elevation – necessity & limiting valued		
	3 rd	Revision of last Class About gradient And Giving Assignment Questions		
	4 th	Checking Assignment AND Revised		
6 th	1 st	Points and crossings of Rail		
	2 nd	Definition, necessity of Points and crossings.		
	3 rd	Types of points & crossings with tie diagrams.		
	4 th	Revising diagram of rail crossing and points.		
	1 st	Laying of track of rail.		
	2 nd	Duties of a permanent way inspector.		

7 th	3 rd	Important question discussion like Cant Deficiency and Negative Super elevation.		
	4 th	Previous year question and answer discussion.		
8 th	1 st	Maintenance of track of rail.		
	2 nd	Doubt Clearing Class And Giving Assignment Questions.		
	3 rd	Checking Assignment Questions And Revised.		
	4 th	Previous year question and answer discussion.		
9 th	1 st	<u>SECTION-B</u> Introduction to bridges: Definitions		
	2 st	Components of a bridge.		
	3 rd	Classification of bridges.		
	4 th	Requirements of an ideal bridge.		
10 th	1 st	Bridge site investigation, hydrology & planning.		
	2 nd	Selection of bridge site, Alignment.		
	3 rd	Determination of Flood Discharge.		
	4 th	Waterway & economic span.		
11 th	1 st	Afflux, clearance & free board		
	2 nd	Bridge foundation.		
	3 rd	Scour depth minimum depth of foundation.		
	4 th	Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells.		
12 th	1 st	caisson foundation and Cofferdams		
	2 nd	Bridge substructure and approaches.		
	3 rd	Types of piers.		
	4 th	Types of abutments.		

13 th	1 st	Types of wing walls.		
	2 nd	Approaches		
	3 rd	Recalling the term abutment and their uses in Bridge.		
	4 th	Previous year question Discussion and Practice.		
14 th	1 st	Culvert		
	2 nd	Types of culvers.		
	3 rd	Brief description of Culvert		
	4 th	Recalling Previous year questions and answers.		
15 th	1 st	Cause ways.		
	2 nd	Types of causeways		
	3 rd	Brief description of Cause way.		
	4 th	Recalling Previous year questions and answers.		

Tejaswini Dal

HOD

Chittaranjan Prada

DEAN

[Signature]

PRINCIPAL