

Dicipline:	CIVIL	Semester: 5th	Name of the Teaching Faculty <i>Sanjhamitra Mohapatra</i>	
Subject:	Railway and Bridge Engrg.	No of Days/Week Class Allotted: 04	Semester From date: _____ To date _____	No. of Weeks: 15
WEEK	Class Day	Theory Topics		
01	1st	Introduction to Railway and bridge Engrg. Railway terminology.		
	2nd	Types of rails and advantages of railways.		
	3rd	classification of Indian railways.		
	4th	Permanent way - Definition and component of permanent way.		
	5th			
02	1st	concept of gauge and discuss about it.		
	2nd	Different gauges prevalent in India ; suitability of these gauges under diff. condition		
	3rd	Track material - concept of rails, sleeper and ballast.		
	4th	Rails - Types of rails section, length of rails.		
	5th			
03	1st	Rail joints - types and requirement of ideal joint.		
	2nd	Purpose of welding of rails & its advantages.		
	3rd	Rails - functions and requirement of rails.		
	4th	Creep - Definition, cause and prevention.		
	5th			



WEEK	Class Day	Theory Topics
04	1st	Sleepers - Definition, function and requirements of an ideal joint.
	2nd	Classification of sleepers, Advantages & disadvantages of different types of sleepers.
	3rd	Ballast - functions and requirements of ballast, materials for ballast, fixtures for broad gauge.
	4th	Connection of rails to rail - fishplate, fish bolts, Connection of rails to sleepers.
	5th	
05	1st	Geometric for broad gauge - typical cross-sections of single broad gauge railway track cutting & embankment.
	2nd	typical cs of <del>single</del> double broad gauge railway track cutting & embankment.
	3rd	Cross-section of a gauge in railway track.
	4th	Permanent & temporary land width.
	5th	
06	1st	Gradient for drainage.
	2nd	Gradient for drainage.
	3rd	Gradient for drainage.
	4th	Sleeper elevation - necessity & limited values.
	5th	



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WEEK	Class Day	Theory Topics		
07	1st	Points & crossings - Definitions, necessity of points & crossing.		
	2nd	Types of points.		
	3rd	Types of points.		
	4th	Crossings with tie diagrams.		
	5th			
08	1st	Laying & maintenance of track - methods of laying.		
	2nd	Maintenance of track.		
	3rd	Duties of a permanent way inspector.		
	4th	BRIDGE - Introduction to bridges, Definition, Components of a bridge		
	5th			
09	1st	Classification of bridges.		
	2nd	Requirements of an ideal bridge & classification.		
	3rd	Bridge site investigation, hydrology & planning - selection of bridge site.		
	4th	Alignment, Determination of flood discharge.		
	5th			



WEEK	Class Day	Theory Topics
10	1st	Waterway & economic span.
	2nd	Afflux, clearance & free board.
	3rd	Bridge foundation - scour depth min <sup>m</sup> , depth of foundation.
	4th	Types of bridge foundation with neat sketches.
	5th	<del>spread foundation.</del>
11	1st	spread foundation.
	2nd	pile foundation - well foundation.
	3rd	Sinking of well.
	4th	caisson foundation.
	5th	
12	1st	coffer dams.
	2nd	Bridge substructure & approaches - Introduction.
	3rd	Types of piers.
	4th	Types of abutments.
	5th	



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WEEK	Class Day	Theory Topics		
13	1st	Types of wing walls .		
	2nd	Approaches .		
	3rd	class Test .		
	4th	culvert - Introduction to culvert . & its types .		
	5th			
14	1st	Briefly description about types of culvert .		
	2nd	Causeways - Introduction to causeway & its types .		
	3rd	Briefly description about types of causeways .		
	4th	Revision class - 1		
	5th			
15	1st	Revision class - 2		
	2nd	Revision class - 3		
	3rd	Revision class - 4		
	4th	Revision class - 5		
	5th			