

Discipline:-	Semester:-	Name of the teaching faculty:-
Civil Engg.	5 <sup>th</sup>	Barsha Priyadarshini Panda
Subject:-	No. of days/ per week	Semester from date:- 01.10.2021
Railway & Bridge Engg.	class allotted: 05	To date:- 08.01.2022
		No. of weeks - 15

Months	Weeks	Class Day	Theory Topics
October	1 <sup>st</sup>	1 <sup>st</sup>	<u>Chapter-1</u> <u>Introduction</u>
			* Railway terminology.
		2 <sup>nd</sup>	* Advantages and Classification of Indian Railways.
		3 <sup>rd</sup>	* <u>Chapter-2</u> <u>Permanent way</u>
			Defination and components of a permanent way.
		4 <sup>th</sup>	* Concept of gauge
		5 <sup>th</sup>	* Different gauge prevalent in India.

MONTH	WEEK	CLASDAY	THEORY TOPICS
	2 <sup>nd</sup>	9 <sup>th</sup> , 1 <sup>st</sup>	* Suitability of these gauge.
	4 <sup>th</sup>	1 <sup>st</sup>	* These gauge under different conditions.
		2 <sup>nd</sup>	Chapter - 3 Track materials
			* Rails → Functions and requirements of rails.
		3 <sup>rd</sup>	* Types of rail sections, length of rails.
		4 <sup>th</sup>	* Rail joints → types, requirements an ideal joint.
		5 <sup>th</sup>	* Purpose of welding of rails & its advantages.
	5 <sup>th</sup>	1 <sup>st</sup>	* Creep - Definition, cause & prevention.
		2 <sup>nd</sup>	* Sleepers - Definition, function & requirements of sleepers.
		3 <sup>rd</sup>	* Classification of sleepers.
		4 <sup>th</sup>	* Advantages & disadvantages of different types of sleepers.
		5 <sup>th</sup>	* Ballast → Functions & requirements of ballast.

MONTH	WEEK	CLASDAY	THEORY TOPICS
Nov	1 <sup>st</sup>	1 <sup>st</sup>	* Materials for ballast.
		2 <sup>nd</sup>	* Structures for Broad gauge.
		3 <sup>rd</sup>	* Connection of rails to rail-fishplate, fish bolts.
		4 <sup>th</sup>	* Connection of rails to sleepers.
			Chapter - 4 Geometric for broad gauge.
	2 <sup>nd</sup>	1 <sup>st</sup>	* Typical Cross-sections of single.
		2 <sup>nd</sup>	* Double broad gauge railway track in cutting.
		3 <sup>rd</sup>	* Double broad gauge railway track in embankment.
		4 <sup>th</sup>	* Permanent land width of railway track.
		5 <sup>th</sup>	* Temporary land width.
	3 <sup>rd</sup>	1 <sup>st</sup>	* Gradients for drainage.
		2 <sup>nd</sup>	* Super elevation - necessity & limiting values.

MONTH	WEEK	CLASS DAY	THEORY TOPICS
		3 <sup>rd</sup>	Chapter-5 <u>Points and Crossing</u> * Definitions of points and crossing, necessity of points.
		4 <sup>th</sup>	* Necessity of points and crossing.
		5 <sup>th</sup>	* Types of points.
	4 <sup>th</sup>	1 <sup>st</sup>	* Crossings with tie diagrams
		2 <sup>nd</sup>	Chapter-6 <u>Laying &amp; maintenance of track.</u> * Methods of laying.
		3 <sup>rd</sup>	* Maintenance of track.
		4 <sup>th</sup>	* Duties of a permanent way inspector.
		5 <sup>th</sup>	<u>BRIDGES, SECTION-B</u> Chapter-1 * Introduction to bridges Definitions of bridges & components of a bridges.

MONTH	WEEK	CLASS DAY	THEORY TOPICS
	5 <sup>th</sup>	1 <sup>st</sup>	* Classification of bridges & requirements of an ideal bridge.
		2 <sup>nd</sup>	* Chapter-2 <u>Bridge site investigation, hydrology.</u>
Dec	1 <sup>st</sup>	1 <sup>st</sup>	* Selection of bridge site.
		2 <sup>nd</sup>	* Selection of bridge site alignment.
		3 <sup>rd</sup>	* Determination of Flood discharge.
	2 <sup>nd</sup>	1 <sup>st</sup>	* Waterway & economic span.
		2 <sup>nd</sup>	* Afflux, clearance & free board.
			Chapter-3
		3 <sup>rd</sup>	* Bridge foundation Scour depth minimum depth of foundation.
		4 <sup>th</sup>	* Types of foundation.
		5 <sup>th</sup>	* Describe spread foundation.
	3 <sup>rd</sup>	1 <sup>st</sup>	* Describe pile foundation.



MONTH	WEEK	CLASS DAY	THEORY TOPICS
		2 <sup>nd</sup>	* Describe pile foundation - well foundation.
		3 <sup>rd</sup>	* Describe sinking of well.
		4 <sup>th</sup>	* Classification of foundation.
		5 <sup>th</sup>	* Solve numerical problems.
	4 <sup>th</sup>	1 <sup>st</sup>	* Solve numerical problems.
		2 <sup>nd</sup>	* Cofferdams & describe.
			<u>Chapter-4</u> Bridges Substructure and approaches
		3 <sup>rd</sup>	* Describe the types of piers.
		4 <sup>th</sup>	* Types of abutments & describe of abutment.
	5 <sup>th</sup>	1 <sup>st</sup>	* Types of wing walls.
		2 <sup>nd</sup>	* Describe the types of wing walls.
		3 <sup>rd</sup>	* Describe approaches.
			<u>Chapter-5</u> <u>Culvert &amp; Cause ways</u>
		4 <sup>th</sup>	* Discuss about Culvert.

MONTH	WEEK	CLASS DAY	THEORY TOPICS
		5 <sup>th</sup>	* Types of Culvert - brief description.
Jan	1 <sup>st</sup>	1 <sup>st</sup>	* Briefly description about Culvert.
		2 <sup>nd</sup>	* Types of causeways.
		3 <sup>rd</sup>	* Brief description about cause way.
		4 <sup>th</sup>	* Discuss about Culvert & cause way.
		5 <sup>th</sup>	* Discuss about bridges Culvert & Cause way.