



RAAJDHANI ENGINEERING COLLEGE, BHUBANESWAR

LESSON PLAN

2023-2024

Discipline: Civil Engineering	Semester: 5 th sem	Name of the Teaching Faculty: Dr. Sanjay Kumar Behera
Subject: Railway & Bridge Engineering	No. of Days/Week Class Allotted-4	Session: Sep 2023- Jan 2024

Week	Class Day	Theory Topics	
1st	1st	Railway terminology	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Advantages of railways	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Classification of Indian Railways	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Definition and components of a permanent way	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
2nd	1st	Concept of gauge, different gauges prevalent in India, Suitability of these gauges under different conditions	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Rails	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	ASSIGNMENT EVALUATION, CLASS TEST	
	4th	Sleepers	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
3rd	1st	Ballast	https://archive.nptel.ac.in/courses/105/105/105105216/

			https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Fixtures for Broad gauge	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Typical cross-sections of single & double broad gauge Railway track in cutting and embankment	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	ASSIGNMENT EVALUATION, CLASS TEST	
		Permanent & temporary and width	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
4th	1st	Gradients for drainage	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Super elevation – necessity & limiting value	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Definition, necessity of Points and crossings	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	ASSIGNMENT EVALUATION, CLASS TEST	
5th	1st	Types of points & crossings with tie diagrams	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Methods of laying & maintenance of track	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Details of a permanent way inspector	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Definitions	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046

6th	1st	ASSIGNMENT EVALUATION, CLASS TEST	
	2nd	Components of a bridge	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Classification of bridges	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Requirements of an ideal bridge	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
7th	1st	Selection of bridge site	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Quiz test	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Bridge alignments	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Determination of flood discharge	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
8th	1st	Waterway & economic span	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Afflux, clearance & freeboard	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	ASSIGNMENT VALUATION, CLASS TEST	
	4th	Collection of bridge design data & subsurface investigation	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
9th	1st	Scour depth minimum depth of foundation	https://archive.nptel.ac.in/courses/105/105/105105216/

			https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Types of bridge, foundations – spread foundation, pile foundation-pile driving, well foundation–sinking of wells, Cassion foundation	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Cofferdams	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	ASSIGNMENT EVALUATION,CLASSTEST	
10th	1st	Types of piers	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Types of abutments	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Types of wing walls	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Approaches	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
11th	1st	ASSIGNMENTEVALUATION,CLASSTEST	
	2nd	Masonry bridges	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Steel bridges – classification with sketches Concrete bridges– classification,brief description	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	With sketches	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
12th	1st	IRC bridge loading	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046

			FB705289046
	2nd	ASSIGNMENT EVALUATION,CLASS TEST	
	3rd	Types of culvers - brief description Types of causeways-brief description	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Quiz test	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
13th	1st	Types of bridge, components revision	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Classification of bridge,requirements revision	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046

	3rd	Quiztest	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Selection of bridgesite, alignment	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
14th	1st	Determination of flood discharge revision	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Waterway, economic span	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Previous year question discussion	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	4th	Afflux,clearance,free board revision	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
15th	1st	Classtest	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	2nd	Types of bridge foundation, spread foundation doubt clearing class	https://archive.nptel.ac.in/courses/105/105/105105216/ https://www.youtube.com/playlist?list=PL8F270FB705289046
	3rd	Classtest	
	4th	Previous year question discussion	