

Department of Civil Engg.
Govt. Polytechnic for Women Rehan
Distt. – Kangra (H.P.) - 176022



LESSON PLAN

Program Name	Civil Engineering
Subject Name	Elective-II (Railways , Bridges and Tunnels)
Subject Code	CEPE212 - (II)
Semester	4th
Subject Teacher Name	Namish Rana

Evaluation Scheme

Sr. No	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1.	Railways Bridges and Tunnels	3	-	40	-	40	60	-	60
Reference Books		(1)Rangwala,SC; — Railway EngineeringI, Anand Charotar Book Stall (2)Victor Johnson, —Essentials of Bridge EngineeringI Oxford and IBH and Tru Edu publications							

Course Outcomes (COs)

CO – 1	Classify different types of railways sections.
CO – 2	Identify different parts of Bridges.
CO – 3	Draw typical sections of tunnels
CO – 4	Know the drainage method of draining water in tunnels.

Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
PART-1: RAILWAYS	Introduction to Indian Railways	27/01/2026		
	Railways surveys: Factors influencing the railways route, brief description of various types of railway survey	28/01/2026		
	Classification of permanent way describing its component part	29/01/2026		
	Rail Gauge; Definition, types, practice in India	03/02/2026		
	Rail – types of rails	04/02/2026		
	Rail Fastening: Rail joints, types of rail joints, fastening for rails, Fish plates, spikes bearing plates	05/02/2026		
	Sleepers: Functions of sleepers, types of sleepers, requirements of an ideal material of Sleepers.	10/02/2026		
	Ballast: Function of ballast, requirements of an ideal material of ballast	11/02/2026		
	Crossing and signalling: Brief description regarding different types of crossing/signalling	12/02/2026		

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	Maintenance of track: Necessity, track fixtures;	17/02/2026			
	maintenance and boxing of ballast, maintenance gauges, tools.	18/02/2026			
	Drains, methods of construction	19/02/2026			
	Drains, methods of construction.	24/02/2026			
PART-II: BRIDGES	Introduction	25/02/2026			
	Bridge—its function and component parts, difference between a bridge and A culvert	26/02/2026			
	Classification of Bridges	03/03/2026			
	Their structural elements and suitability:	05/03/2026			
	According to life—permanent and temporary	10/03/2026			
	According to deck level—Deck, through and semi-through	11/03/2026			
	According to material—timber, masonry, steel, RCC, pre-stressed	12/03/2026			
	Class test -I	17/03/2026			
	IRC classification	18/03/2026			
	Bridge Foundations: Introduction to open foundation pile foundation, Well foundation	19/03/2026			
	Piers, Abutments and Wing walls	24/03/2026			
	Piers—definition, parts; types—solid (masonry and RCC), open	25/03/2026			
	Abutment and wing walls—definition, types of abutment (straight and tee), abutment with wing walls	31/03/2026			
	(straight, splayed, return and curved)	01/04/2026, 02/04/2026			
		Class Test-II	07/04/2026		
		Bridge bearings Purpose of bearing; types of bearing—fixed plate, rocker and roller	08/04/2026		
		Maintenance of Bridges	09/04/2026		
	Inspection of bridges Routine maintenance	16/04/2026, 21/04/2026			
	Definition and necessity of tunnels	22/04/2026,			
	Typical section of tunnels for a national highway and single and double broad gauge railway track.	23/04/2026, 28/04/2026			
PART-III: TUNNELS	Ventilation—necessity and methods of ventilation, by blowing,	29/04/2026 30/04/2026			
	exhaust and combination of blowing and exhaust	05/05/2026			
	Drainage method of draining water in tunnels	06/05/2026 07/05/2026			
	House test	12/05/2026			
	Drainage method of draining water in tunnels	13/05/2026, 14/05/2026			
	Lighting in tunnels & lining of tunnels	19/05/2026			

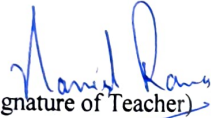
	Lighting in tunnels & lining of tunnels	20/05/2026, 21/05/2026 26/05/2026		
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Assignments


Assignment No	Contents of Syllabus Covered	Proposed Date	Actual Date	Remarks
A-1	Part -I	04/03/2026		
A-2	Part- II	01/05/2026		

House Test/Class Test

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Part- I	As per HPTSB Academic Schedule		
Class Test -2	Part -II			
House Test	Part-I , Part II & Part -III(50%)			


(Signature of Teacher)


(Signature of HOD)

Approved

Principal
Govt. Polytechnic for Women
Rehan Distt. Kangra (H.P.)

